THE INADEQUACY OF PRESENT-DAY CONCEPTS OF MENTAL DEFICIENCY AND MENTAL ILLNESS IN CHILD PSYCHIATRY [1]

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I

The problem of a new orientation in the field of developmental disorders of mentation is a matter of major importance in present-day concepts of child psychiatry. Some may consider it of theoretical value only. Others may consider it a question of terminology or classification, but classifications represent a state of knowledge and reflect the concepts that are dominant and necessary in a certain stage of the development of a special science from which further progress can be made. For the most part this field is now at a level of description only, similar to the level of psychiatry in the days of Kraepelin. The present-day inadequacy has evolved from changes that took place in the scientific understanding of everyday problems, and it is the need of reality and not speculation that makes a revision and review of these problems necessary. It is obvious that a more dynamic approach is long overdue.

The foundation of children's psychiatric units is based on the idea that "insanity" is different from mental deficiency and, vice-versa, that "feeblemindedness" may be clearly distinguished from mental illness. From the very beginning, definitions of mental deficiency, however vague, emphatically excluded "insanity." However, once a psychiatric unit for children is in operation there are numerous requests for more beds because so many children previously considered as merely defective are now, as a matter of diagnostic expediency, considered psychotic rather than "straight" feebleminded. While the staffs of state schools often feel that many of their patients are, in reality, "psychotic" and need transfer to a mental hospital, the head of a psychiatric child's unit, on the other hand, finds himself confronted with numerous requests for the admission of children who might better be classified as mental defectives and sent to appropriate institutions in order to preserve his unit for the "real" psychiatric cases.

Leo Kanner, in a recent treatise on feeblemindedness, recognized this peculiar situation, stating: "It does indeed seem strange that after nearly a century of scientific occupation with 'feeblemindedness,' those best informed should still be wondering what they have been, and are, dealing with. . . . . Surely, nobody nowadays has the urge to redefine the concepts of 'insanity,' 'psychosis,' or 'psychiatry.'"

The authors are not the only ones who are puzzled by the present situation, but they feel the urgent need for redefinition of terms such as "insanity" or "psychosis" applied to mental disorders of children. Confronted with the problem of the differentiation between 2 rather ill-defined terms, one must begin by defining them individually.

What is mental deficiency? There are several ways of arriving at a definition. An author may formulate his own definition and hope that he carries enough authority to make himself heard, but a glance at the endless number of definitions that have been offered during the last century shows that such an attempt is ill-advised. One may, in-

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stead, investigate the practical application of the term since, after all, there have been in existence institutions for the feebleminded for more than 100 years, and 5 to 10% of the feebleminded are institutionalized.

It is noteworthy that no Federal law in America deals with feeblemindedness. All legislation is on a state level and the laws of different states vary greatly without any attempt at unification. Many states lack any statutory definition of mental deficiency, and regulations are based on the division of feeblemindedness into 3 categories: idiocy, imbecility, moronity. A feebleminded person is a person who is placed in one of these categories.

Studying all definitions in use in the United States, it appears that the common denominator for the whole group is that its members have IQs below 70 on the Stanford-Binet test, as though mental deficiency were a psychological diagnosis, based on the outcome of a specific test.

A small group of leading psychiatrists have always maintained that the diagnosis of mental deficiency should not be based on the outcome of a psychological test alone but should depend upon a number of factors. Walter E. Fernald's famous 10 points of inquiry for diagnostic and prognostic purposes is a good example of this attitude.

A glance at the classifications of mental defects, now commonly in use, reveals a most amazing and inconsistent table of clinical entities that are based on entirely different logical categories.

If we accept the fact that the psychometric approach is not sufficient for diagnosis, and that a medical or biological one is essential, the next step is to redefine idiocy, imbecility, and feeblemindedness. Better still, we should ask ourselves who are those people who suffer from an incapacity that places them in any of these categories.

Using the results of 250 post-mortem examinations as a basis for an answer to these questions, it may be stated categorically that a person classified as an idiot or imbecile is a person who has suffered: (1) a prenatal developmental disorder; or (2) a paranatal disorder; or (3) a postnatal disorder; or (4) a metabolic or endocrine disorder.

Thus an analysis of severe mental defect demonstrates that all cases correspond to different neuropsychiatric conditions that are all characterized by pathology of the central nervous system. There is no condition that cannot be expressed in terms of developmental or metabolic brain pathology.[5]

The group of prenatal disorders includes malformations and anomalies due to infections of the mother (German measles, mumps, other virus diseases, toxoplasmosis), Rh factor, endocrine deficiencies, and genetic disorders. The common denominator is an abnormality present at birth that results in an agenetic or dysgenetic mental disorder. For the pathologist, such a person reveals developmental defects of the nervous system. For the clinician, he will show evidence of anomalies in personality structure. On psychological tests such persons will reveal severe retardation. The concept that a mental age below 5 years in adults or adolescents has anything to do with a "child-like" behavior is not only misleading, but absurd. The comparison of the state of defectiveness with mental ages has, however, produced the common idea that the "idiot" or "imbecile" is a perfectly "normal" person with whom nothing is wrong except that his mental development has not advanced beyond a certain age level. So common is this misconcept that many teachers, psychologists, psychiatrists, or administrators in the field of mental deficiency do not recognize that a severely defective person may be, at the same time, a confused, unpredictable, "psychotic" individual whose behavior may resemble exactly that of schizophrenia in adults. There are no uniform behavior patterns of idiocy because idiocy is an ill-defined term for a great variety of symptomatic psychoses of infancy and childhood. To exclude these symptomatic states from the field of child psychiatry is like eliminating all organic psychoses (Pick's disease, Alzheimer's disease, Huntington's Chorea, Schilder's disease, general paresis) from general psychiatry. If one asks why an idiot's behavior be called psychotic, one can only answer with the question—in which way may an arteriosclerotic or senile dementia patient be called psy-

[5] More details are presented in Clemens E. Benda, Developmental Disorders of Mentation and Cerebral Palsy, Grune & Stratton, 1951.

chotic? If disorientation in time and space, inadequate memory, unfitness to compete with others, inability to take care of oneself, are standards for the diagnosis in an adult of a severe personality disorder, called psychosis, then these same standards may be applied to the child. Only if one attempts to make hallucinations, delusions, or depersonalization the sole requirements for a diagnosis of psychosis can conditions of mental defect be excluded from psychiatry.

Many psychiatrists who accept this argument may still feel that mental deficiency is a stationary, irreversible condition while mental illness has a progressive character. This thesis is untenable because posttraumatic as well as postinfectious conditions are frequently progressive and all mental disturbances due to metabolic disorders show a definite progressive character, frequently terminating in psychotic conditions.

The psychiatric manifestations of developmental disorders of mentation are a counterpart of what may be seen in advanced age with some modifications attributable to childhood and youth. Historically, the term "idiot" comes from the Greek and means a person who lives in his own world, a "private" person, a recluse. The term was originally used for all exceptional children who were not able to make a proper community adjustment. However, applying psychiatric standards to behavioral patterns, the idiot is almost, *by definition,* an "autistic" child. This term is forcing modern psychiatry to reconsider severe behavior disorders and to attempt a better psychiatric differential diagnosis and a new analytical approach. There is no doubt that the autistic child is the product of many different etiological factors and, while autism may remind one of schizophrenia, it indicates also that this child either has not established any contact with his surroundings and remains behind a wall, or that he has lost the key to communicating with his environment. The behavior of many of those severely handicapped children is reduced to a vegetative level of existence.

From this brief analysis it is evident that neither intelligence tests nor a psychiatric behavior analysis offers a workable differentiation between mental defect and psychosis. If, for legal purposes, a differentiation must be maintained, it can be established only by a definition that introduces an entirely different factor into the diagnosis. We are accustomed to thinking of a patient with a neurosis or psychosis as someone who has been "normal" for a certain period of his life, and that the deviation of behavior has occurred in a person who had formerly established an adequate level of social behavior. If this criterion for differentiation be used, the term "mental deficiency" could be applied to all children who have never been "normal" in their lives; that is, by definition mental deficiency would include the prenatal and paranatal disorders of mentation. Difficulty arises, however, as soon as conditions are included that are the result of traumatic experiences or infectious or other diseases occurring after birth. The English law attempted to solve this problem by including all disorders that "may have arisen at any time during the first 18 years of life . . . . that may have been brought about by disease or injury." This is not yet accepted in the United States.

As far as psychiatry is concerned, we should abandon, as much as possible, all generalizing categories and proceed to an investigation of the specific condition with which we are dealing. Only in this way can each condition be understood and treated according to its specific needs.

II

The largest group of patients usually called mentally defective, those whose IQ ratings range from 50 to 75, need an entirely different approach. These patients are called, in England, feeble-minded in contrast to the strong in mind; and, in America, morons. Newer terms are "subcultural" or "intellectually inadequate." This group deserves attention from a psychological, sociological, educational, anthropological, and neuropsychiatric point of view. Former attempts at classification of the mentally defective have almost invariably divided the patients into 2 groups, and it matters little whether the classification is that of "congenital and acquired," "endogenous and exogenous," "primary and secondary," or the latest proposal (Lewis) "pathological and subcul-

tural." The flaws of the earlier dichotomies are obvious because even a congenital defect is "acquired" at some time during the life span of the germ plasm and similar objections must be raised against "primary and secondary" or "exogenous and endogenous." Morever, the latter term has two different meanings since it may refer either to a genetic disorder of a pathological nature, or to mere membership by birth in a group of "subcultural," intellectually inadequate families who are biologically perfectly normal. The term "subcultural" is undesirable because it implies discrimination against this group, which is a genuine part of the cultural distribution of a normal population.

An understanding of this marginal group of intellectually less adequately endowed persons can be reached only by using an entirely different approach. If the IQ rating of a population centers around an average of 100, the normal population will have a distribution of IQs within a range of deviations about equally distributed to both sides of a center of 100. As early as 1869, Galton postulated that the distribution of intelligence scores in the general population could be arranged according to a continuous Gaussian curve. This has been confirmed by several investigators. The distribution of IQ scores, obtained by Binet tests, is quite evenly scattered over a field below and above an assumed norm. The standard deviation can be safely established as about 15 points. Placing the average score at 100, the majority of the normal population will score within a range of plus-minus twice the standard deviation of 15, or within a range of IQs between 70 and 130. Only 2.27% of all the people could be expected to be found at either side of the range beyond these points; in other words, with IQs below 70 or above 130 if the mean of a given population is established at 100. This, however, does not mean that the established 100 IQ of the Stanford-Binet test represents the true center of a given population. Anything outside 3 times the standard deviation can be considered exceptional. To be more specific, one may predict on theoretical grounds, which have proved their validity by several clinical studies, that it is not justified to think that IQ ratings in a normal distribution would extend as far down as zero. Below 55 we deal actually with qualitatively or structurally different patterns of mentality that cannot be compared with normal patterns by quantitative measures. The actual range of measurable behavior, testable by Binet standards, extends, therefore, between 50 and 150. Below an IQ of 50 psychometric ratings are rather meaningless, not because the tests themselves are poorly constructed, but because their content is not appropriate for the psychometric appraisal of persons whose

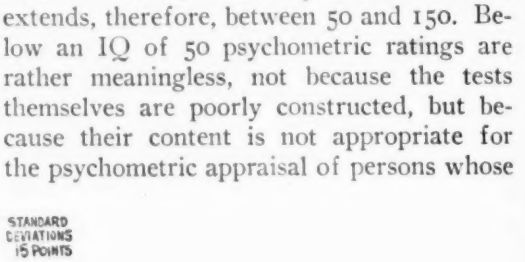

FIG. 1.—Psychological and psychopathological classification of normal and abnormal intelligence scores.

The normal variations of human intelligence are grouped around a mean of 100, and fall into a range plus-minus two times the standard deviations of 15 points. A certain percentage, about 2.5, of the total falls within three times the standard deviations. Theoretically, the normal intelligence falls, therefore, in a range between 55 and 145 IQ rating. The range of intellectually inadequate persons with IQ's between 55 and 70 is composed of three groups:

A. Normal minus variations within three times the standard deviations.
B. Genetic oligoencephaly.
C. Accidental cases, due to trauma, infections, metabolic disorders or emotional disturbances.

The severer forms of mental deficiency, with IQ ratings below a range of 45 to 55, are composed of neuropsychiatric disorders:

D. Prenatal developmental disorders.
E. Traumatic "birth injuries."
F. Infectious diseases.
G. Metabolic disorders; neoplastic malformations; so-called degenerative diseases; and psychoses.

mental disturbance is such that they are classified as "idiot" or "imbecile." Among the minus variations of human intelligence of the group having IQs between 55 and 70, about 2% are expected variations in a biologically homogeneous group. Actually the number of persons testing below 70 is much greater, at least twice the expected frequency. We may, therefore, conclude that the additional 2 to 3% have been added to the inadequate population by pathological factors.

These considerations throw light on the following sociological facts. A theoretical population has as many people below an IQ rating of 100 as above. Even though educational standards are set up on a level that requires for passing abilities consistent with an IQ rating of 95, the persons who are below this, and so not able to compete successfully, are still a part of the normal population. In a democracy, which postulates education for everybody, children with IQs between 70 and 95 are entitled to special education in their own right. No culture has so far proved that persons with lower intellectual capacities are not a legitimate part of the whole cultural group; or that any culture can function without their contributions and participation. The minus variations of a cultural group are, therefore, the responsibility of educators, psychologists, sociologists, and administrators. Their problems are not primarily psychiatric, but since neglect, discrimination, and contempt are likely to affect this marginal group more than any other, psychiatry and mental hygiene must assume guardianship over these persons who are otherwise likely to become behavior problems for psychodynamic reasons. At present most psychiatrists have the attitude that IQs below basal norm (IQ 80) exclude a patient from psychiatric consideration in child guidance or psychiatric outpatient clinics. It is wrong to neglect this group. Mentally retarded individuals do not make up a homogeneous group and many known personality types are represented among them. They are subject to the same emotional stimuli and traumata as are "normal" people. While they may react on a lower level of integration, nevertheless the end result may be the same as in their "normal" mates, simple anxiety states, a neurosis or a psychosis. They can and do respond to accepted psychiatric treatment for these conditions. Present-day concepts think of the mentally retarded as having no emotional responses.

These persons may or may not be suited to analytical treatment, but they are as much in need of psychotherapy as the average group in a competitive civilization. This right to inclusion among those needing psychiatric attention and not merely special education follows the principles of medical ethics, established as early as 1803 in James Percival's "Principles of Ethics."

Recent observations on outpatients and institutionalized patients indicate that low IQ ratings and mental defect are not necessarily synonymous. Of the constitutionally inadequate group some have IQ ratings as high as 100, while among biologically "normal" persons some have IQs as low as 55. There is, therefore, an overlapping of the 2 groups as was shown by Jaederholm and Pearson in 1931, and reiterated by Penrose in 1949. Jaederholm collected a number of children who were diagnosed as mentally defective on social, educational, or psychological grounds, and yet who actually had IQ ratings up to 100. Newer clinical investigations indicate that the intellectually inadequate group is composed of 5 categories: (1) emotionally disturbed "normal" children, (2) mentally ill children, (3) minus variations of the average population, (4) familial oligoencephaly or oligophrenia, and (5) the brain-injured child (posttraumatic, postencephalitic, metabolic, and other disorders).

Group 1.—Emotionally disturbed children are frequently seen because of their failure to talk or act like other children, or to get along in school. Their teachers, pediatricians, and, last but not least, their parents are often ready to call them stupid or feebleminded; but these children are not feebleminded nor should they even be called "pseudo-feebleminded." Many of them have been rejected or neglected in infancy, sometimes so severely that psychosomatic symptoms have developed and mental inadequacy is present in association with physical factors. These children score inadequate test results because of factors that lie outside the intellectual

field. They frequently respond well to proper psychosomatic treatment.

Group 2.—This group includes those children whose mental illness makes them unable to cope successfully with the test situation in spite of adequate intellectual faculties. Their emotional disturbance is so severe, or their motivation so different from the average, that they do not understand the meaning of communication with their environment and live, therefore, in their own world. Infantile schizophrenia belongs in this group as well as infantile dementia (Heller's disease), which should be distinguished from it.

Group 3.—The third group represents biologically normal persons who have low IQ ratings but are, as has been shown before, a legitimate part of the population. Their low IQ rating is genetically determined but, paradoxically, their genes are not pathological from a biological point of view. As studies made by Roberts on a sample population in England indicate, expected IQ ratings in a family cover a range from 15 IQ points above the brighter parent's IQ to 15 IQ points below the duller parent's rating. Taking 3 fictional family groups, the first shows a family with parents having IQs around 130. Their offspring may be expected to have a range of IQs between 145 and 115. If one of their children falls very far below this rating one may surmise that pathological factors have interfered with development. The second family's parental IQs are around 100 and their children may, therefore, have IQs from 85 to 115. The parents of the third family have IQs around 70 and their children's range from 55 to 85. In such a family a child with an IQ above 100 will be found only rarely, but if the new generation marries within the average range, their offspring will be completely absorbed within the average. There are many examples at hand of children having higher IQs than their parents. On the other hand, it is evident that the third group contributes greatly to that part of the population called feebleminded.

Group 4.—The fourth group forms a clinical, genetic entity for which one of the authors has suggested the term oligoencephaly. The term oligophrenia proper would be even more adequate were it not used in many countries as identical with mental deficiency or feeblemindedness. The Greek term "oligos" has a different meaning from micros (small, as in microcephaly), and implies "little" or "stunted." The oligoencephalitic group is indeed characterized by "too little" in every respect. It has been called also the "almost" group. Based on pathological observations and clinical studies, the oligoencephalitic group represents a genetic pathological entity of constitutional inadequacy. One may note the unfitness of terms such as exogenous and endogenous if applied to this group, because oligoencephaly is endogenous as a germ plasm defect, and yet the defect is frequently due to a germ mutation that may appear for the first time under exogenous conditions.

Group 5.—The last group comprises the "accidental" cases, results of milder birth injuries or later traumata, infections, or metabolic and noxious factors that impair intellectual capacities to a minor degree. One finds in this group usually single cases, a child with average parents and normal siblings. From a neuropsychiatric point of view, one finds among these patients with minor degrees of retardation the mildest manifestations of injury to the nervous system. Many patients reveal some type of neurological disorder that can be classified as cerebral palsy; others manifest behavior problems and/or conduct disorders. This "pathological" or "clinical" group is different from the 4 previous groups on account of physical findings and the absence of genetic factors. Psychological studies, such as those by Strauss, Werner, Goldstein, and others, suggest that the "brain-injured" child can be identified through the careful analysis of certain psychological tests.

Conclusions and Summary

1. A survey of patients with severe disorders of mentation indicates that we are dealing with an "organic" brain syndrome in which the failure of mentation is due to factors that interfere with the proper function of the central nervous system. We are dealing with "symptomatic" mental conditions and behavior patterns that vary greatly in their psychiatric manifestations. The only essential difference between mental "defi-

ciency" and mental "illness" lies in the time of onset. If one wishes to restrict the term mental illness to those conditions in which there existed a period of mental health before onset, all those disorders that are of a prenatal, developmental, or traumatic and vascular character, connected with the process of birth, could be classified as mental deficiency. As soon, however, as the post-traumatic, post-infectious, and metabolic syndromes of infancy and childhood are included, such distinction cannot be maintained. This would have important legal consequences as all such patients would have to be excluded from institutions for mental defectives until such a time as the laws should be changed.

If, however, the problem is approached from a dynamic and biological point of view, it makes little difference whether a child's nervous system is injured by an infection in the seventh month of gestation, at birth, or 5 years afterwards. From a clinical point, the terms mental deficiency, idiocy, imbecility are inadequate and should be discarded.

2. Knowledge of the severe forms of disorders of mentation has made much more progress than is reflected in present-day textbooks or articles on this matter; and the practical management of the "feebleminded" has not kept pace with the scientific understanding of this subject. The terms idiocy and imbecility have outlived their usefulness and should disappear from psychiatric nomenclature. These diagnoses are psychometric terms indicating mental ages from 1 month to 8 years in an adult, but the idea of expressing severe mental inadequacy in terms of mental ages carried, inherently, the misconcept of comparing morbid conditions of mental derangement with stages of normal development through which every child has to pass.

The different developmental disorders of mentation lead to intellectual inadequacies and personality disorders that should be classified according to etiological factors and the time of their occurrence.

3. These deliberations are of practical consequence for the building of institutions for all types of children affected with mental disorders. The so-called "state schools" should be transformed into psychiatric hospital-schools with the clear realization that their lot is to care for and train children, from infancy through adolescence, affected with conditions both psychologic and organic interfering with the normal process of mentation. While the age limit for patients in hospital-schools should be possibly 25 years, two facts have to be integrated into the management and legal regulations for persons needing institutionalization from childhood on. A large number of the severely handicapped are not able to leave an institution at 25 years of age. Under present conditions the custodial cases are lifetime residents, many of them reaching an age of 60-or-70-odd years, and such patients gradually fill an institution thus depriving children of the benefits of the educational facilities that are available and could be utilized to a much greater extent. The hospital-schools should, therefore, be relieved of such a case load at the age of 25 by other types of institutions where custodial cases of chronic mental defect could be placed and employed according to their limited capacities.

The other factor that has not been given sufficient consideration and should be included in future regulations and administrative measures is that the growing child needs long-term provision. The artificial distinctions between mental defect and mental illness and the definition of psychosis as legally used in adult psychiatry are not feasible in child psychiatric administration. Many children are not "psychotic" by legal definition, but they are in need of long-term care by social, educational, and medical standards. Is the brain-injured child with erratic behavior and emotional instability "psychotic" if he takes a knife and tries to attack another person? Such a person could not be helped in a 30-day observation period nor the problem of management even approached in any adequate way. This problem is even more pertinent with regard to sex offenders and other types of behavior disorders. It is true that the needs of the "psychotic" child are different from those of children suffering from prenatal or paranatal disorders, but among the whole group the differences are not as great as the common interest in having

hospital and boarding school facilities for these patients whose psychosomatic needs cannot be sequestered. All the standards of management that have been derived from needs of adult psychiatry have been, in the past, transferred to childhood and adolescence without understanding that the field of child neuropsychiatry is a different one and that standards of diagnosis and management must grow out of the needs of the children and not out of regulations designed for a totally different group.

4. Under present conditions the care of the severely handicapped and the large group of intellectually inadequate persons is under one management and legal ruling. Although one may argue the wisdom of such arrangement, one may agree that this way of management has many advantages. Such institutions have possibilities for employment and training that otherwise would not be available and could not be achieved in the community for this intellectually inadequate group. The problem of indenture in penal institutions shows clearly how difficult it is to gradually integrate into the community those persons who still need supervision. The high-grade, intellectually inadequate "moron" is not only a psychiatric problem. Sociology, education, and anthropology are equally interested in his welfare and have to contribute greatly to better understanding; and yet, even the diagnosis "moron" is not a psychiatric diagnosis and it was demonstrated that the group consists of 4 separate categories that have very different needs. The whole planning and management can be successfully carried out only when a differential diagnosis is established.

5. Psychiatric responsibility for patients of this type is postulated by the observations that the blame for social misbehavior, criminality, and psychopathic reactions cannot be put on the diagnosis of mental defect. Observations on thousands of patients indicate that their behavior patterns are conditioned according to dynamics that are universal in each culture and that we have just recently started to understand through psychodynamic psychiatry. The behavior of 2 patients with the same diagnosis differs greatly, not so much according to their "personalities," but according to their emotional experiences as a part of a group. Since the number of mentally handicapped patients is a large one, psychiatry, mental hygiene, and education must develop programs for the mentally handicapped, not only by creating new and better institutions, but by better integration of these persons into the community life outside a hospital.

6. Present-day psychiatric concepts of the mentally retarded are totally inadequate. Nomenclature should be revised as suggested above and the term "Psychosis with Mental Deficiency" dropped completely.

BIBLIOGRAPHY

Benda, C. E. The familial imbecile or oligoencephaly as a morbid entity. Am. J. Ment. Defic., 49: 32, July 1944.

Binet, Alfred, and Simon, Th. The Development of Intelligence in Children (translated by Elizabeth S. Kite, publications of the Training School at Vineland, New Jersey, Department of Research). Baltimore: Williams and Wilkins Company, 1916.

Dayton, N. A. Report of the Mental Deficiency Committee. Public Document 117, Commonwealth of Massachusetts, 1939.

Fernald, Walter E. Standardized Fields of Inquiry for Clinical Studies of Borderline Defectives. The National Committee for Mental Hygiene, Inc., New York, 1922.

Galton, F. Hereditary Genius. London: Macmillan and Co., 1869.

Gelb, A., and Goldstein, K. Source Book of Gestalt Psychology. New York: Harcourt, Brace, 1938.

Goldstein, K. The modifications of behavior consequent to cerebral lesions. Psychiat. Quart., 10: 586, Oct. 1936.

Halperin, S. L. Human heredity and mental deficiency. Am. J. Ment. Defic., 51: 153, 1946.

Jaederholm and Pearson. On the Continuity of Mental Defect. London: Dulau and Company, 1914.

Kanner, Leo. A Miniature Textbook of Feeblemindedness. New York: Child Care Publications, 1949.

Lewis, E. O. Types of mental deficiency and their social significance. J. Ment. Sci., 79: 298, 1933.

Penrose, L. S. The Biology of Mental Defect. New York: Grune & Stratton, 1949.

Percival, James. Principles of Ethics, 1803.

Report of the Mental Deficiency Committee (so-called "Wood Report"). Printed and published by His Majesty's Stationery Office, London, 1929, reprinted 1931.

Roberts, J. A. F. Observations on a representative group of children of school age, with an ac-

count of some family and social characteristics of the brightest, the average and the dullest. American Association Mental Deficiency Proceedings, 63rd Annual Session, Chicago, 1939. J. Psychoasthenics, **44**: 79, 1939.

Strauss, A. A., and Lehtinen, Laura E. Psychopathology and Education of the Brain-Injured Child. New York: Grune & Stratton, 1947.

Strauss, A. A., and Werner, H. The mental organization of the brain-injured mentally defective child. Am. J. Psychiat., **97**: 1194, March, 1941.

Terman, Lewis M., and Merrill, Maud A. Measuring Intelligence. New York: Houghton Mifflin Company, 1937.

Werner, H., and Strauss, A. Problems and methods of functional analysis in mentally deficient children. J. Abnorm. & Soc. Psychol., **34**: 37, Jan. 1939.

SELECTIVE CORTICAL UNDERCUTTING

Results in New Method of Fractional Lobotomy

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Following the fundamental work of Fulton(1-3), Egas Moniz and Almeida Lima (4), and Freeman and Watts(5), prefrontal lobotomy has become well established as a treatment for mental illness. Until 1947 most lobotomists endeavored to sever as many of the frontothalamic connections as possible, varying the plane of section only in an anterior or posterior direction, and little had been done to determine specificity of function of the frontal lobe in man. Recent progress has been made in developing various selective operations in order to permit localization of function and thus limit the personality blunting that has been the inevitable price paid for a complete lobotomy operation. This blunting reveals itself in the higher realms of creative imagination, foresight, ambition, and social sensitivity as stressed by Rylander(6) and others(7). It is less noticeable when lobotomies are limited to severely deteriorated schizophrenic patients of long standing, but if they are to be applied to the intractable neuroses, affective psychoses, psychalgias, and addiction tension states it is imperative that psychosurgery result in no appreciable personality deficit. There is no reason to believe that technically precise and extremely selective operations should not be developed for those milder emotional and psychosomatic dysfunctions. In striving toward this goal, both psychiatrists and neurosurgeons have been seeking ever more selective methods and locations for operation. This article presents the psychiatric end results obtained in 150 patients undergoing the new selective operation called cortical undercutting.

Historical.—Penfield *et al.*(8-10) first did selective cortical ablations, called gyrectomies, with meager results. Pool and the Greystone group(11) followed with ablations of the superior surface of the frontal lobes, called topectomy, with better results. British and American neurosurgeons have developed many types of partial leucotomies consisting of quadrantic, superior, inferior, and rostral sectioning of the white matter which connects the superior, medial, or orbital frontal cortex to the thalamic nuclei(13-16). Wycis and Spiegel have introduced the thalamotomy with precise electric destruction of parts of the medial nucleus of the thalamus by means of a Horsley Clark stereotaxic machine(17). Freeman(18) has introduced and extended Fiamberti's blind puncture method of destroying limited connections from the tips of the frontal lobes to the thalamus, called transorbital lobotomy. One of the present authors (WBS) has developed selective cortical undercutting, first described at Lisbon in 1948 and in the *Journal of Neurosurgery* in January 1949 (19, 20).

Method and Advantages.—Selective cortical undercutting is a method of functionally and anatomically isolating various areas of the frontal cortex with preservation of its own and adjacent blood supply, making a line of cleavage with a brain spatula and fine suction tube at the relatively avascular junction of gray and white matter, thus interrupting long and short association fibers to the thalamus and elsewhere. Topectomy results in a major craniotomy procedure, leaves exposed brain tissue and may interfere with adjacent blood supply because of the necessity of dividing blood vessels around its entire periphery. Transorbital lobotomy lacks precision because of its blind approach, absence of definitive

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[2] From the Connecticut State Hospital.
[3] From the Norwich State Hospital.

measurements and tendency of the brain to shift when pressed upon by a blunt rod. It has the great advantage of extreme simplicity. Quadrantic and partial leucotomies lack precision because of the concentration of white fibers into bundles that cannot be measured nor recognized by the naked eye. Thalamotomy is a blind operation requiring an elaborate technical stage and team. In short, selective cortical ablations and selective cortical undercuttings offer techniques sufficiently precise to permit a detailed study of the effects of frontal lobe function on mental disease; and cortical undercuttings offer certain technical advantages over cortical ablations.

Selection and Technique.—The same 3 areas and technique with some few changes have been used in this series as described in the *Journal of Neurosurgery*(19). These areas are (1) the superior surface, chiefly in areas 9 and 10 of Brodmann, (2) the orbital surface, and (3) the medial surface including the anterior cingulate gyrus both above and below the corpus callosum. They have been selected because of Pool's results in ablation of the superior surface in man and because of the profound physiologic and emotional changes following ablation or stimulation of the orbital and cingulate areas in animals(21). Undercutting of the superior surface no longer includes extension along the medial surface (Fig. 1) and is now limited to a rectangle measuring 7.5 cm. posteriorly from the frontal pole and 4.0 cm. laterally from the medial edge. The orbital surface is undercut *en toto* back to the temporal lobes and the chiasmatic cistern (Fig. 2). The medial surface and anterior cingulate gyrus is approached through 1½" trephines on either side of the midline halfway between the glabella and coronal suture (Fig. 3). The peripheral limits of all undercuttings are carried superficially through cortex to the pia arachnoid by peripheral angling of the spatula as well as extension of the undercutting to the falx, to the frontal lobe tips, to the temporal lobes, and to the chiasmatic cisterns. This is done for research reasons rather than therapy in order to isolate anatomically the cortex from its long fibers, short U fibers, and cortical feltwork fibers. Approximately 50% of the patients have been done under local anesthesia in a conscious state in order to carry out psychologic and physiologic tests, especially stimulation studies of the superior surface, orbital surface, cingulate gyrus, and uncus. The surface areas undercut in each of the 3 areas are roughly equal, averaging 50 to 60 sq. cm. (the largest being the superior surface) as compared to some 160 sq. cm. of frontal lobe cortex isolated by the standard "open" lobotomy. Silver clips are now used instead of wire loops to demonstrate by X-ray the far corners of the undercut area. The electrocautery is used only in the initial 3 cm. cortical incision. Special large trephine, spatula-forceps, headlight, and extra fine suction tip with release vent are necessary for precision undercutting.[4]

Case Selection.—One hundred and fourteen mental patients were subjected to selective undercutting and 33 additional patients to control "standard" lobotomies at 2 state hospitals; 25 patients at the Institute of Living; 8 at the Hartford Hospital; 3 at the Veterans Hospital, Newington. Three "undercut" patients were converted to a standard "open" lobotomy at the Institute of Living after 3, 12, and 12 months respectively. The psychiatric results with the exception of the psychoneuroses and affective psychoses will be limited to the 2 state hospital patients because of a uniformity of study and selection. In these hospitals 4 patients were operated upon at weekly intervals, alternating between the 2 hospitals, one patient each undergoing undercutting of (a) the superior surface, (b) the orbital surface, and (c) the medial-cingulate gyrus surface, with the fourth undergoing a standard "open" lobotomy as a control. In this control operation all white matter was sectioned by a modification of the Lyerly open technique along a plane of section extending from a point 3.5 cm. anterior to the coronal suture down to a point level with the sphenoid ridge in the pupillary line. All 4 cases had been selected from the same general ward and sex and judged by the same criteria. Sixty-three undercuttings and 15 standard controls were done at the Connecticut State Hospital, Middletown, and 51

[4] Manufactured by Codman & Shurtleff, 104 Brookline Avenue, Boston, Mass.

undercuttings and 18 standard controls at the Norwich State Hospital. The results are reported separately for the 2 state hospitals because of a marked difference in results and need for clarification of those differences.

Classification.—The results have been listed under operative and diagnostic groups. Analysis of the degree of improvement has been similar to that used by the Connecticut Lobotomy Committee. Four persons have rendered an opinion after having studied or lived with the patient both before and after operation: the ward physician, nursing supervisor, ward attendant, and relatives. In addition, one senior physician from each hospital (EKW and AJP) have carried out their own analysis and assisted at the operation in every case. Psychiatric results have been placed in 6 categories: worse, unimproved, slightly improved, moderately improved, markedly improved, and symptom-free. Definition of these categories follows:

Worse: Increase of previous abnormal behavior or symptoms.

Unimproved: No appreciable change.

Slightly improved: No change in ward status or work ability; slight improvement in symptoms and need for supervision. Improvement in extreme tendency toward destructiveness, food refusal, or suicide.

Moderately improved: Appreciable diminution in symptoms and moved to a better ward; improved work ability; no longer constitutes a serious nursing problem.

Markedly improved: Nearly complete subsidence of symptoms; ground or home privileges; good work ability but not up to prepsychotic standards.

Recovered or symptom-free: Relief from all symptoms; normal social recovery; return to prepsychotic level of employment; described as cured by relatives although deviations from the normal may still be apparent to the psychiatrist.

The last 3 divisions have been combined into the one category of "significantly improved."

Results

A. *Psychiatric Results:*

The psychiatric results are shown in Table 1 under the categories of significant improvement, marked improvement, and "home." The psychiatric results of selective undercutting approximate those of the standard control lobotomy group in spite of the fact that undercutting operations interrupt only one-third the amount of cortex interrupted in the standard procedure. The longer 2-year series of undercuttings at Connecticut State Hospital yielded 60% significant improvement, which equaled exactly the results of the standard lobotomy control series at that hospital, and compares favorably with the 64% significant improvement reported in the 3-year over-all report on 450 cases by the Connecticut Lobotomy Committee. The results in the affective psychoses and neuroses (obsessive-compulsive and tension states) have been universally good regardless of the area selected, indicating that complete lobotomies are not necessary. The results in schizophrenia are dependent on the case selection as revealed in the results obtained in 2 state hospitals, the results being favorable in paranoid schizophrenia in persons having been hospitalized less than 9 years. Psychosurgery has not benefited a small number of mental defectives undergoing operation in this study.

B. *Personality Results:*

It can now be said with some certainty that selective fractional undercutting causes far less personality deficit than does the complete lobotomy procedure. This has been repeatedly observed and commented upon by ward personnel, physician, and relatives. Drs. Francis Grant and Nulsen at the University Hospital, Philadelphia, made similar observations after performing superior surface undercutting on 12 nonpsychotic patients for intractable pain. Undercutting of the orbital surface appears to cause the least change in personality of all operations, the patient appearing entirely unchanged in the early days after operation. This applies both to the personality and to the psychoses. Therapeutic effects on the psychosis then become gradually apparent over the ensuing weeks. There is no visible apathy and occasionally considerable gaiety. There may be some motor hypermotility and restlessness continuing for several weeks. Undercutting of the superior surface causes an appreciable but temporary blunting and apathy similar to, but to a much less degree than, a standard lobotomy. Abrupt relief

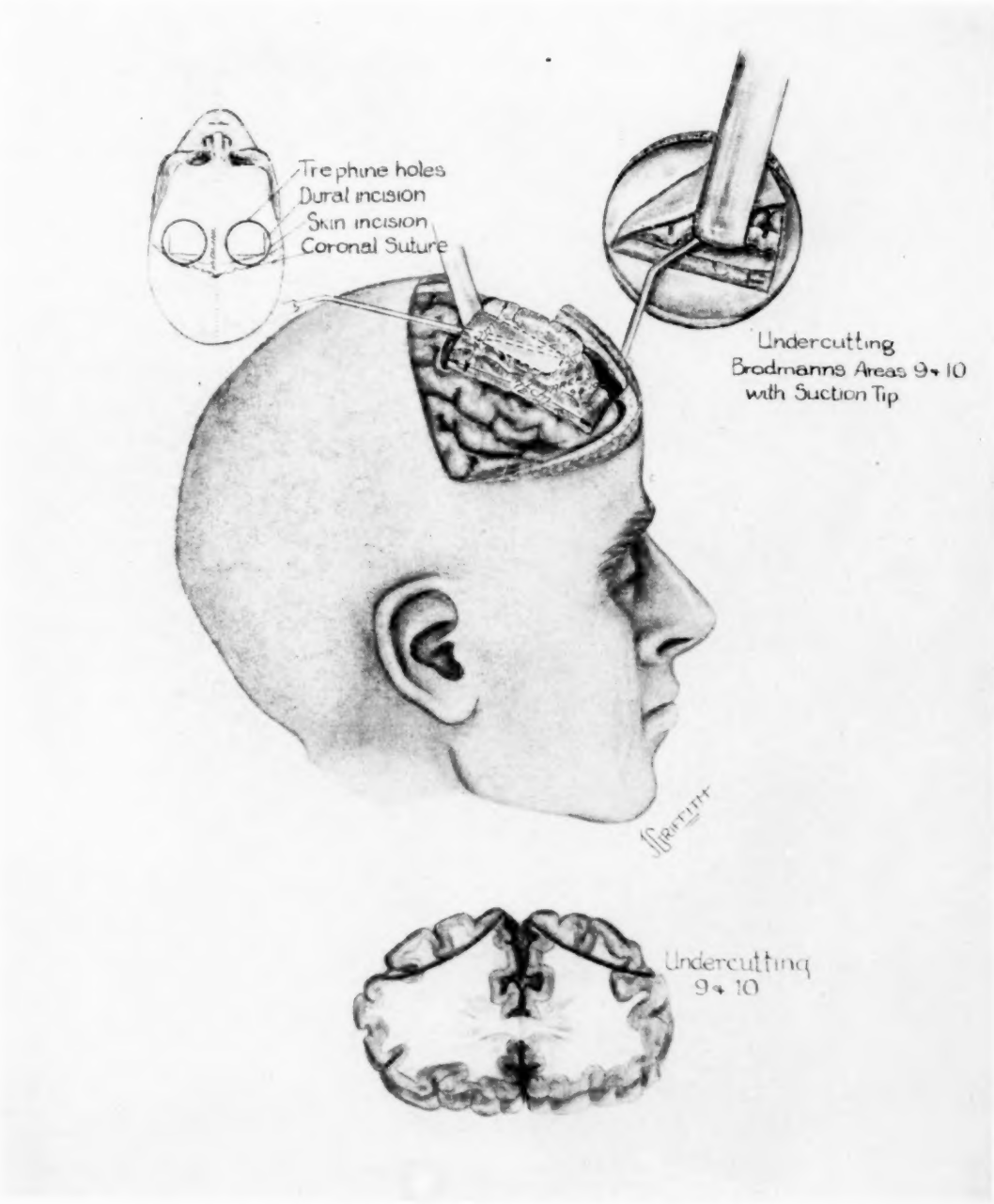

FIG. 1.—Sketch of undercutting of superior surface.

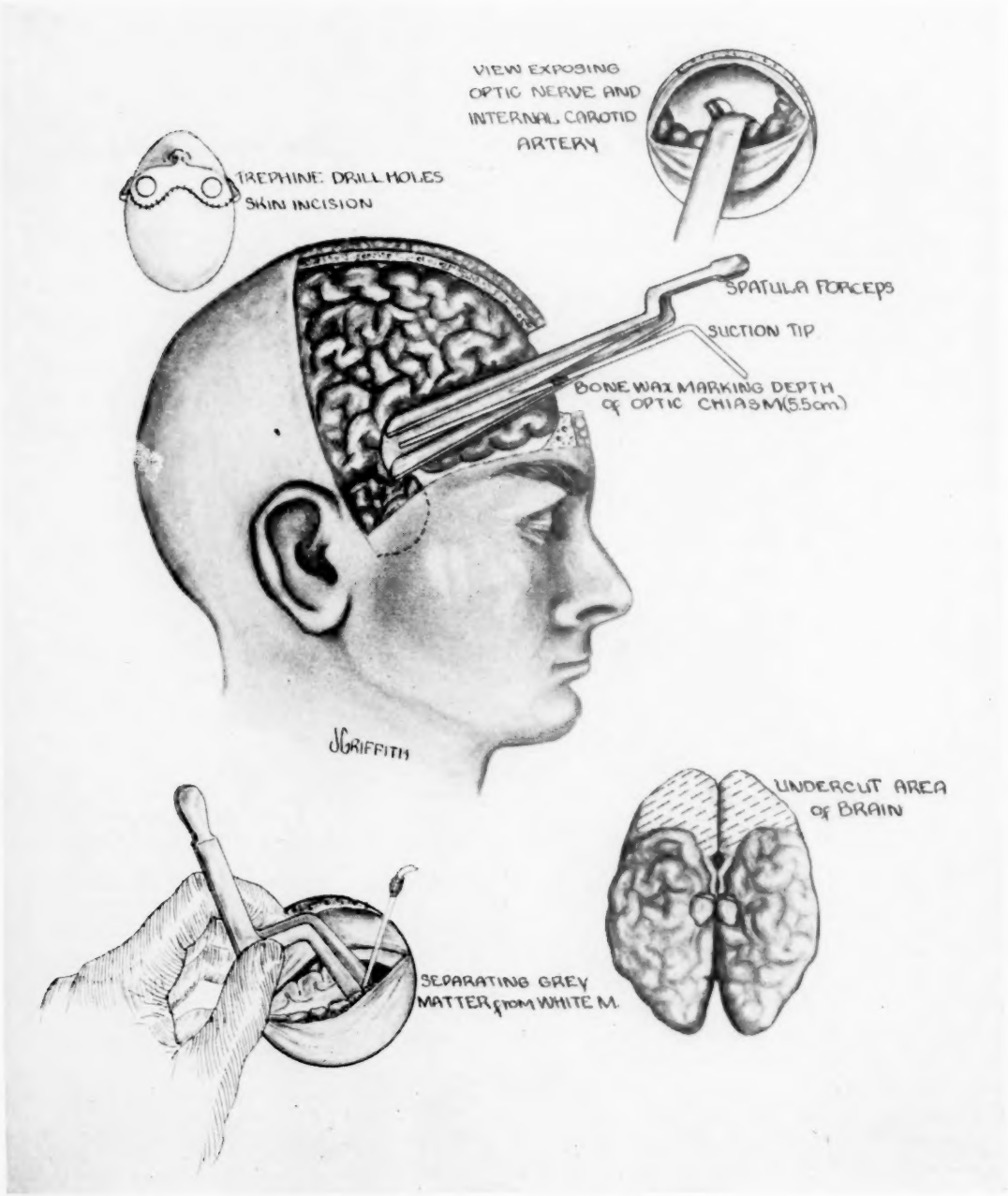

FIG. 2.—Sketch of undercutting of orbital surface.

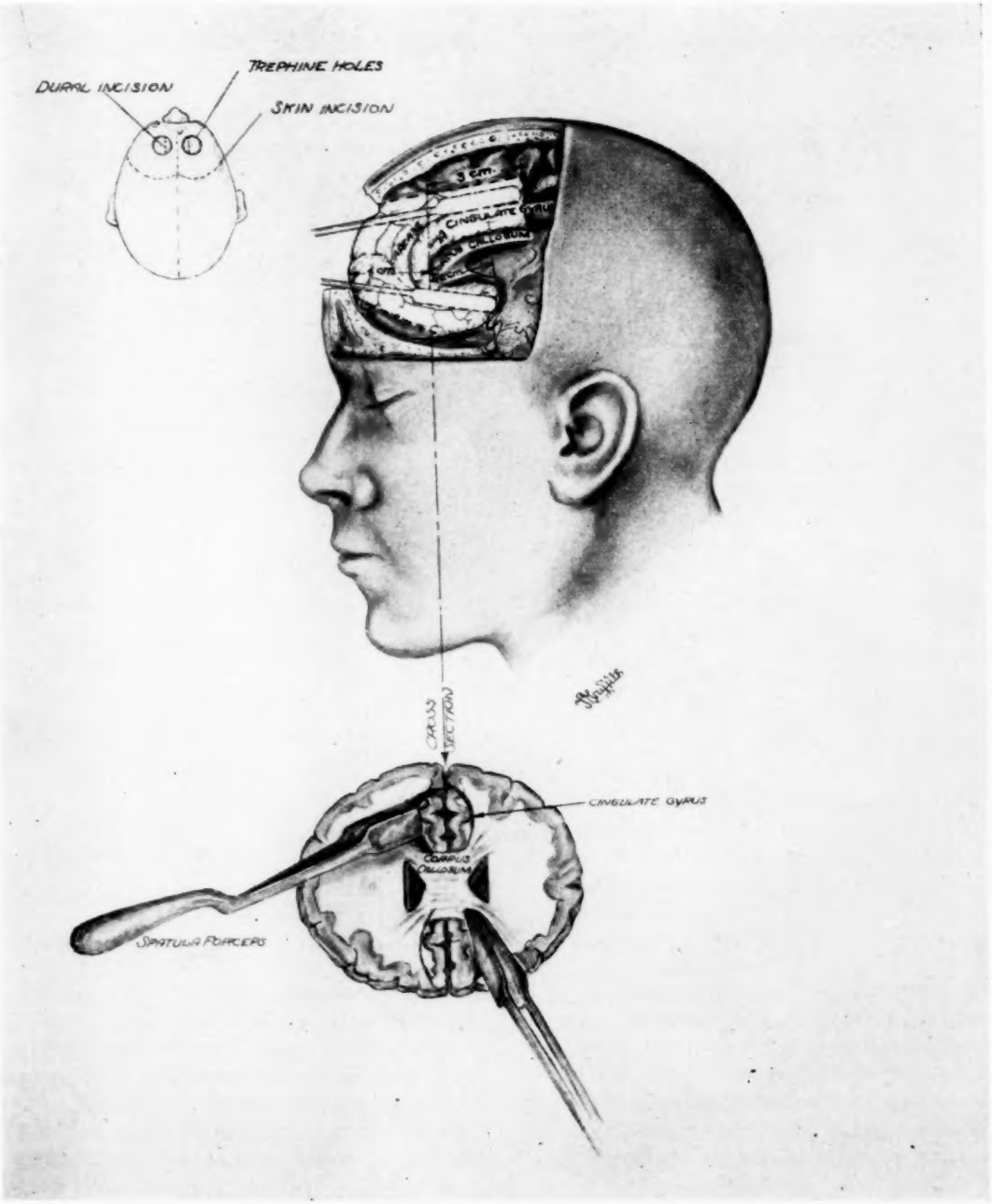

FIG. 3.—Sketch of undercutting of medial-cingulate gyrus surface.

from psychotic symptoms is more likely to occur although the end results in both superior and orbital surface undercuttings become approximately equal after 3 months' time. Undercutting of the medial cingulate gyrus surface causes temporary drowsiness and apathy with little apparent early therapeutic benefit, and the patient is physically more "knocked out" than in the other 2 operations. There are no marked personality changes. Its therapeutic effects on psychoses are hard to evaluate because of the apparent large number of early failures who have shown late improvement. Hence, final evaluation of this procedure is yet to be made.

TABLE 1

STATISTICAL PSYCHIATRIC RESULTS COMPARING 3 AREAS OF UNDERCUTTING WITH A CONTROL GROUP OF STANDARD LOBOTOMIES INDICATING LITTLE THERAPEUTIC SPECIFICITY WITHIN THE FRONTAL LOBES

(Statistics for the category of "moderate improvement" have been omitted.)

	Undercutting			Control standard
	Superior	Orbital	Medial	
Schizophrenia: 118 cases	33	28	32	25
Significant improvement	10 (30%)	14 (50%)	16 (50%)	10 (40%)
Marked	5	4	4	4
Home	1	1	4	2
Affective psychoses: 17 cases	7	6	1	3
Significant improvement	7 (100%)	5 (100% of survivors)	1 (100%)	3 (100%)
Marked	5	3	..	1
Home	2	2	1	2
Psychoneuroses: 7 cases	2	4	..	1
Significant improvement	2	4	..	1
Home	2 (100%)	4 (100%)	..	1 (but marked deterioration)
Mental defectives with psychoses: 4 cases	..	3	1	..
Significant improvement	..	0	0	..
Psychopaths: 2 cases	..	1	..	1
Significant improvement	..	1	..	1
Organic psychoses: 2 cases	..	1	..	1
Significant improvement	..	1	..	0

C. *Relapses:*

Follow-up studies have ranged from 3 months to 2½ years. There have been few relapses after the first postoperative month. An occasional patient has shown an immediate temporary improvement for the first 1 or 2 and occasionally 3 weeks and then relapsed to his preoperative status. The writers have felt that this constituted a good prognostic sign and indicated that an inadequate lobotomy had been performed. In certain of these cases they have advised conversion to a complete lobotomy at a later date. An occasional "recovered" patient has broken under the strain of outside social or home environment and returned to his hospital with quick response to a few shock treatments or a month's hospital sojourn. Three (2 manic and 1 involutional) out of 14 affective psychoses, all of whom had shown significant improvement, had minor relapses clearing spontaneously without further therapy. All are symptom-free and

home at the time of this writing. With few exceptions after this first month postoperatively, the trend has been toward further improvement from month to month and even year to year in all our lobotomized patients.

D. *Epilepsy* (See Table 2):

Seizures occurring more than one week postoperatively have been listed under the category of postoperative epilepsy and have occurred in 6.6% of undercut patients. In contradistinction to other published reports, no prophylactic anticonvulsant medication has been used and only rarely has a patient had a second seizure after receiving such medication. Hence, seizures have not proved a social liability. Seizures earlier than one week postoperatively have been listed separately as an operative complication. This was done because electric stimulation studies were carried out simultaneously on approximately ⅓ of the patients and proved a frequent cause of transitory seizures, especially following stimulation of the uncus(22, 23). These temporary seizures due to electric stimulation or operative irritation occurred in 2 cases at Connecticut and 6 cases at Norwich State Hospitals and none of those patients have as yet developed late epilepsy. There is a gross disparity between the 2 hospitals in the medial-cingulate undercutting cases with 21% showing epilepsy at Norwich and none at Connecticut State Hospital, possibly attributable to all cases at Norwich having had stimulation studies while comparatively few were done at Connecticut State Hospital. These epileptic figures compare favorably with an 8.0% average for the standard open lobotomy controls, with a 10% average for all "open" lobotomy operations done in the State of Connecticut and a 10% average for all "closed" lobotomy operations done by Freeman and Watts(24). It is recognized that epileptic figures for undercuttings will rise with further passage of time.

TABLE 2

OCCURRENCE OF POSTOPERATIVE SEIZURES IN 3 AREAS OF UNDERCUTTING AND A CONTROL GROUP OF STANDARD LOBOTOMIES

	Total	Undercutting			Control standard
		Superior	Orbital	Medial	
Middletown					
Operations	63	22	21	20	15
Seizures	2	1	1	None	1
	(3.2%)	(4.5%)	(4.8%)		(7%)
Norwich					
Operations	58	19	20	19	20
Seizures	6	1	1	4	2
	(10.3%)	(5.3%)	(5%)	(21%)	(10%)
Total					
Operations	121	41	41	39	35
Seizures	8	2	1	4	3
	(6.6%)	(5%)	(4.9%)	(10%)	(8.6%)

E. *Complications:*

There have been 2 deaths in 145 cases (one orbital and one superior surface undercutting) representing a 1.4% mortality. Five cancer pain cases have been omitted in these statistics. Both deaths were from hemorrhages and could have been prevented if the surgeon had been at hand. There were no infections. There were 2 additional hemorrhages in medial surface undercuttings that cleared under drainage through needle punctures. There were 3 transient hemipareses clearing completely in 2 medial and 1 orbital surface undercuttings. There has been one permanent hemiparesis in an orbital surface undercutting and no other permanent sequelae. Urinary incontinence has been largely absent in all operations including

the standard controls probably as a result of operating well forward of Brodmann's areas 8 and 6(8).

F. *Physiologic Changes:*

These have been largely absent in both undercutting and stimulation studies of the prechiasmal, orbital, and cingulate gyrus areas. This is in contradistinction to the experimental findings in animals(21) and in our uncal stimulation studies in man(23). Nausea and vomiting accompanies manipulation and undercutting of the superior rostral cingulate gyrus. Somnolence or stupor occurred more frequently and for a longer duration in the medial-cingulate undercuttings than in other undercuttings or standard controls but did not constitute a problem. Somnolence of over 6 hours occurred in 7.3%, 7.9%, and 7.0% of undercuttings of superior surface, orbital surface, and standard lobotomy controls respectively. Somnolence of over 24 hours occurred in 4.7%, 2.6%, and 0% respectively in these cases. However, in the medial-cingulate undercuttings, somnolence occurred in 20% of the cases, all of which lasted over 24 hours. Profound autonomic changes including postural edema, blood pressure lability, vasomotor collapse, and "hunched posturing" did occur in 2 cases of medial and cingulate surface undercutting but they were drained by needle of large subcortical blood clots situated beneath or within the anterior horns of the ventricles. Complete recovery ensued in one month's time. No such autonomic changes occurred in the other 38 cases of medial and cingulate surface undercutting, suggesting that these changes were due to adjacent pressure or vascular damage.

Henry at the Institute of Living has demonstrated a dampening of amplitude alternating with regular, periodic bursts of waves, bilaterally asynchronous in electrocorticograms taken from the cortex isolated by undercutting(25). In animals these "suppression-burst" waves had been thought to be due to anesthesia (dial) and to arise from deeper centers, but such a phenomenon occurring in conscious human subjects from isolated cortex militates against both of these theories. Electrocorticograms from areas previously undercut showed the periodic "suppression-burst" waves continuing one year after the initial undercutting operation (22). The ECG showed the above changes to be present to the boundaries of the undercut area, with an abrupt reversion to a normal ECG beyond these boundaries. This indicates a remarkable electrical specificity of the undercut area as well as an ability of isolated cortex to generate its own electrical waves.

G. *Pathology:*

Meyer and McLardy of London have so far reviewed the specimens of superior surface and orbital cortex that had been undercut 1 year and 3 months previously. This opportunity presented itself when subjecting 3 patients at the Institute of Living to second-stage standard "open" lobotomy procedures because of insufficient improvement following cortical undercutting. The gross appearance of cortex at operation was normal. Quoting from Meyer:

> One patient (superior surface undercutting) showed macroscopic and microscopic evidence of "thickening and collapse of the smaller cortical vessels" but in the other case (orbital surface undercutting) "there was no clear difference between blocks from the orbital region and from the convexity" and "nowhere was there an appreciable outfall of cells. Both cases showed the two types of nerve cells known to be biopsy artefacts and of negligible pathological significance." There was "distinct gliosis (and degeneration) in the superficial white matter of most cortical specimens indicating that undercutting has been effectively carried out . . . . in spite of this, the effect on the cytoarchitecture of the isolated cortex is slender and doubtful . . . . actually the finding is similar to what one sees in the isolated frontal cortex after leucotomy." One patient showed "formidable gliosis in the deep white matter" on one side well beneath the undercutting. No explanation is offered. This patient had had many courses of shock therapy and presented an atrophic brain and vascular thickening and occlusion.

Serial sections of the thalamus and its connections are being done by Drs. Meyer and McLardy in 2 additional cases of superior surface and orbital surface undercuttings for cancer pain in which death ensued 6 weeks and 9 weeks postoperatively. Although too early to be definitive, the changes in the thalamus should prove of exceptional interest.

Discussion

The schizophrenic results have been divided into 2 parts because of the apparent disparity between 2 hospitals (see Table 3), a disparity of 100% in the superior and orbital surface undercuttings and "control" lobotomies and 200% in the medial-cingulate surface undercuttings. However, the relative differences between the 4 operations within each hospital are roughly the same. both hospitals (21% and 20% significant improvement). Only early results have yet been reported at Norwich, as operations there began one year later than at the Connecticut State Hospital.

A warning is offered that nonpsychotic patients exhibit far more personality deterioration following any form of lobotomy operation than do psychotic patients. Hence, a limited procedure should be done in the

TABLE 3

Apparent Gross Disparity Between 2 State Hospitals in the Psychiatric Results in Schizophrenia

Schizophrenia	Undercutting			Control standard
	Superior	Orbital	Medial	
Conn. State Hosp.: 60 cases	17	15	18	10
Significant improvement	7 (41%)	10 (66%)	13 (72%)	6 (60%)
Marked	5	4	3	3
Home	1	1	4	2
Norwich State Hosp.: 58 cases	16	13	14	15
Significant improvement	3 (19%)	4 (31%)	3 (21%)	4 (27%)
Marked	0	0	1	1
Home	0	0	0	0

Upon analysis, we find that some 250 cases of standard lobotomy had been done at the Connecticut State Hospital before embarking on the undercutting project, while selective undercuttings constituted the first type of lobotomy done at Norwich. As a result the "dregs" of the disturbed wards had already undergone psychosurgery at the Connecticut but not at Norwich State Hospital. This is illustrated by noting an average preoperative hospital stay of 9 years for Connecticut and 15 years for Norwich State Hospital patients. It is further illustrated by an analysis of the schizophrenic patients undergoing operation. Twenty-six out of 60 (43%) were paranoid schizophrenic patients with a fair preservation of personality at Connecticut State Hospital, and only 16 out of 58 (29%) were in this category at Norwich.

Analysis of the extreme disparity in medial and cingulate surface undercutting between the 2 hospitals reveals that the early results (under one year) have been equally poor in psychoneurotic and intractable pain categories.

Conclusions and Summary

1. Complete lobotomy causes too much blunting of the personality to warrant its further use except in severely deteriorated psychotic patients.

2. Selective cortical undercutting is presented as a new method of fractional lobotomy and offers certain technical advantages over other methods, in precision, preservation of adjacent blood supply, facility, and accessibility.

3. A sufficient number of undercuttings have now been done to permit specific recommendations for its therapeutic use.

4. The results of undercutting indicate that there is little specificity of the frontal lobes in their effect on psychoses but definite specificity in their effect on personality. The psychoses are favorably affected by quantitative isolation of any area of the frontal lobes. The personality is unaffected and

shows little if any blunting following isolating of the orbital surface and a definite blunting upon isolation of the superior surface, similar but to a less degree to that found in a standard lobotomy.

5. There is more apparent personality deficit in nonpsychotic than in psychotic patients following any type of lobotomy. Hence only fractional lobotomies should be used in patients suffering from mood disorders, neuroses, or pain.

6. Undercutting of the orbital surface appears the ideal operation for psychoneuroses and milder mood disturbances because of the almost complete absence of personality change.

7. Undercutting of the superior surface or the orbital surface is recommended for the schizophrenic and severe affective psychoses, the results being roughly equal to those obtained in standard lobotomy with significantly less personality deficit.

8. Pain, if accompanied by addiction, psychalgia, or excessive anxiety, responds well to undercutting of the superior surface.

9. Undercutting of the medial, cingulate gyrus surface is technically more difficult and dangerous with inferior early, and possibly equal late, results making final evaluation difficult.

10. Certain cases showing an inadequate response to selective undercutting can be converted to a more complete lobotomy as a second-stage procedure.

BIBLIOGRAPHY

1. Fulton, J. P. Physiology of the Nervous System. New York, Oxford Univ. Press, 1938.

2. Fulton, J. P. Surgery of mental disorder. McGill Med. J., **17**: 133 (April) 1948.

3. Crawford, N. P., et al. Frontal lobe ablation in chimpanzee: A résumé of "Becky" and "Lucy." *In* The Frontal Lobes. Assoc. Res. Nerv. & Ment. Dis. Proc., **27**: 3, 1948.

4. Moniz, E. Prefrontal leucotomy in treatment of mental disorders. Am. J. Psychiat., **93**: 1379, 1937.

5. Freeman, W., and Watts, J. W. Psychosurgery. Springfield, Ill., Chas. C. Thomas, 1942.

6. Rylander, G. Personality analysis before and after frontal lobotomy. *In* The Frontal Lobes. Assoc. Res. Nerv. & Ment. Dis. Proc., **27**: 691, 1948.

7. Goldstein, K. The significance of the frontal lobes for mental performance. J. Neurol. and Psychopathol., **17**: 27, 1936-37.

8. Penfield, W. Symposium on gyrectomy. Part I—Bilateral frontal gyrectomy and postoperative intelligence. *In* The Frontal Lobes. Assoc. Res. Nerv. & Ment. Dis. Proc., **27**: 519, 1948.

9. Cameron, D. W., and Prados, M. D. Symposium on gyrectomy. Part II—Bilateral frontal gyrectomy; psychiatric results. *In* The Frontal Lobes. Assoc. Res. Nerv. & Ment. Dis. Proc., **27**: 534, 1948.

10. Malmo, R. B. Symposium on gyrectomy. Part III—Psychological aspects of frontal gyrectomy and frontal lobotomy in mental patients. *In* The Frontal Lobes. Assoc. Res. Nerv. & Ment. Dis. Proc., **27**: 537, 1948.

11. Columbia-Greystone Assoc. Selective Partial Ablation of the Frontal Cortex. New York: Paul Hoeber, Inc., 1949.

12. Pool, J. L. Topectomy. Anglo-American Symposium on Psychosurgery, Neurophysiology and Physical Treatments in Psychiatry. Suppl. Proc. Royal Soc. Med., **XLII**: 1, 1949.

13. Reitman, F. Orbital cortex syndrome following leucotomy. Am. J. Psychiat., **103**: 238, 1946.

14. Dax, E. C., and Hadley-Smith, E. J. The early effects of prefrontal leucotomy on disturbed patients with mental illness of long duration. J. Ment. Sc., **39**: 182, 1943.

15. Greenblatt, M., and Hochoven, J. Effects of bimedial (bilateral medial) lobotomy. In preparation.

16. McKissock, W. Discussion of thalamotomy—neurosurgical aspects. Anglo-American Symposium on Psychosurgery. Neurophysiology and Physical Treatments in Psychiatry. Suppl. Proc. Royal Soc. Med. **XLII**: 13, 1949.

17. Spiegel, E., et al. Stereoencephalotomy. Presented American Neurological Assoc. Meeting, June 1948.

18. Freeman, W. Transorbital Leucotomy: The deep frontal cut. Anglo-American Symposium on Psychosurgery, Neurophysiology and Physical Treatment in Psychiatry. Suppl. Proc. Royal Soc. Med., **XLII**: 8, 1949.

19. Scoville, W. B. Selective cortical undercutting as a means of modifying and studying frontal lobe function in man. J. Neurosurg. **VI**: 65, 1949.

20. Scoville, W. B. Selective cortical undercutting. Anglo-American Symposium on Psychosurgery, Neurophysiology and Physical Treatments in Psychiatry. Suppl. Proc. Royal Soc. Med., **XLII**: 3, 1949.

21. Fulton, J. F. Functional Localization in Relation to Frontal Lobotomy. New York, Oxford Univ. Press, 1949.

22. Henry, C. E., et al. Electrical stimulation and recordings from the uncus and the orbital brain in man. Presented at American Electroencephalographic Soc. meeting, Atlantic City, New Jersey, June 1950.

23. Liberson, W. T., et al. Stimulation studies of the prefrontal lobe and uncus in man. J. Electroencephal. and Clin. Neurophysiol. In press.

24. Personal communication from Dr. Freeman.

25. Henry, C. E., and Scoville, W. B. Electro-

corticograms from isolated areas of the frontal cortex. To be published.

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POSTSCRIPT:

Since submission of this article, personal communications have been received from Prof. Busch of Copenhagen and Prof. Rylander and Sjorqvist of Stockholm. Their results are of sufficient significance to bear quotation.

Busch has compared the results of 380 standard lobotomies, using the Freeman-Watts method, with 164 cases of undercutting of the medial surface combined with the medial portion of the orbital surface of the frontal lobes, which he has called orbito-medial undercutting. In schizophrenic patients, 42% were improved by the standard lobotomy and 47% by the undercutting with 3% and 13%, respectively, showing marked improvement, while in psychoses other than schizophrenia 61% of standard lobotomies and 79% of the undercuttings were improved with 37% and 55%, respectively, showing marked improvement, although these cases were not exactly comparable because of a poorer selection in the standard lobotomy cases. Busch states he is very satisfied with the undercutting procedure because of its surgical exactitude, absence of complications and better psychiatric results. His psychiatrists note "much less marked psychic reduction than in cases undergoing total lobotomy."

Rylander and Sjorqvist have performed detailed intelligence and psychometric tests in a series of standard lobotomies, inferior leucotomies, and orbital undercutting. They found "a significant lowering of IQ and reduction of abstraction ability was demonstrated 4-14 months after standard lobotomy; less marked but appreciable lowering of IQ without reduction of abstraction ability was noted 3 weeks after inferior leucotomy; no significant lowering of IQ or reduction of abstraction ability was noted 3 weeks after undercutting of the superior surface or the orbital surface. There was a temporary mild euphoria and loss of inhibitions in the superior surface undercutting not found in the orbital surface undercutting."

RESEARCH IN PRIVATE PRACTICE [1]

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I. OPPORTUNITIES AND LIMITATIONS

All clinicians and especially psychiatrists, whether in institutional or in private practice, depend on careful observation and research for advancement in techniques of therapy. Much has been learned from studies of selected hospital and clinic groups by way of psychiatric or laboratory procedures. The major handicap in drawing conclusions from such studies is the difficulty in obtaining a control group or even what statisticians call an adequate sample.

Physicians in private practice suffer the same handicap but have several compensating advantages that might well be used in furtherance of research:

1. They have a greater opportunity than their colleagues in institutions, to study the so-called "well" and "sick" members of families simultaneously.

2. They have a vantage point from which to check their therapeutic effectiveness through follow-up. In general, the hospital population is a more shifting one than is the population of any practicing physician's office.

3. Psychosomatic research is rarely permitted in the private pavilions of general and mental hospitals; hence the study of serial admissions to these institutions of necessity omits that fraction of society that includes the majority of its leaders.

4. Psychiatrists in private practice are in a strategic position to steer their patients' course in sickness and in health. Inevitably, they will call in other specialists as needed and draw on hospital facilities from time to time, but they remain the integrating factor in the therapeutic program. In general and mental hospitals, the physician to whom this function is assigned usually changes according to schedule. Such changes are disturbing to patients and often frustrating to the physician because they handicap him in obtaining an inclusive picture of what he actually accomplishes.

5. No physician has a greater opportunity than the psychiatrist in private practice to become the physician of the family, to accumulate data relative to the family and factors in it that are detrimental to the health of children. Such data, scientifically evaluated, are fundamental for preventive medicine and public health.

Yet the psychiatrist in private practice has made little use of such assets; he seems to be "too busy" or not "research-minded." Furthermore, he suffers from his own peculiar handicaps—his primary focus on treatment and often a lack of adequate opportunity to compare notes with his colleagues.

There is practically no illness syndrome on which light has not been thrown by studies using the psychosomatic approach and techniques. Most of us today use this approach in diagnosis. But since in 50% to 80% of the patients who enter the office of the physician in private practice, whether general or psychiatric, the emotional element is the major one, it is usually impossible to stop with diagnosis and referral. The psychiatrist in private practice must *treat* a large majority of his patients in his office, and much has been learned through the integration of the research opportunities in private practice.

Those who restrict office practice more or less to psychoanalytic treatment have perhaps contributed less than would be expected. For a long time, psychoanalysts interested in psychic mechanisms overlooked or forgot to record the physiological changes and illness syndromes that occurred in relation to the bringing into consciousness of specific emotional conflicts. Scientific contributions were likely to be fragmentary, under such titles as "A Case of Social Anxiety," "Analysis of a Cat Phobia," "Hair as a Symbol of . . . . ," etc., and the wealth of material brought into the analysts' office relative to minor though important illnesses of patients and their families fell by the wayside or was mentioned incidentally if it appeared to have a specific relevance to the conflict under discussion.

Psychoanalytic literature still contains too few good medical histories psychodynamically evaluated, although no one is in a better position than the psychoanalyst to accumulate details of research value without much additional expenditure of time; and it should not be forgotten that thorough psychoanalysis of a few patients is analogous to the microscopic research in the physical sciences that illuminates the principles applicable to a much larger class of phenomena.

[1] Read in the Section on Private Practice of Psychiatry at the 106th annual meeting of The American Psychiatric Association, Detroit, Mich., May 1-5, 1950.

Regardless of the smallness of the sample, such understanding is indispensable to the kind of research that deals with larger aggregates.

II. Research an Integral Part of Therapy

Psychotherapy itself consists in research into the personality of the patient, and, whether or not the patient comes complaining of somatic dysfunction, physiological changes occur in the course of the inquiry. These are handled as they come and go, but if careful record is made of the emotional material with which they are associated, each reappearance of the same symptoms and each shift to a different symptom is handled more deftly. Those of us who are not research-minded too often rely on memory, and a well-trained memory is a great asset. But greater precision is achieved if outstanding factors in a series of cases are recorded in such form as to be readily reviewed. The therapist can not only contribute to the delineation of a personality profile that relates to a certain syndrome, but also clarify for himself the techniques required to deal with similar types of patients. Thus his knowledge becomes more easily transmissible to students, and communicable to colleagues. Research is an integral part of therapy. The better the research, the better the therapy; and the better the therapy, the better the research can be.

Obviously, the keeping of accurate records is time-consuming and costly, but there are many devices available to help reduce this expenditure, such as mechanical recording devices, punch card systems, and good planning. A few minutes after an interview spent on thinking with a research focus about the patient is another time-saving device. Did space permit, it would be desirable to discuss in detail the usefulness to the patient of recording an interview now and then, to play back to him later in the treatment; of blood-pressure recordings before, during, and after the interview; and so on, together with suggestions as to when and how these should and should not be used. But it is perhaps more important to discuss the value of expanding the area of research observation to include the family and its social setting.

Although every illness syndrome provides ample material, problems relative to sexual adjustment and child bearing are selected to illustrate these points: first, because they bulk so large in the case material of the practicing or consulting psychiatrist; second, because the physician who copes successfully with these and related syndromes finds himself in a position to accumulate data relative to healthy and unhealthy family patterns. This may help to provide an ego-ideal for the family in our culture, and in so doing highlight unhealthy aspects of the culture itself.

1. *The Psychiatrist as Doctor of the Family*

After having suggested that the psychiatrist in private practice should and often must become in one way or another the doctor of the family, it becomes necessary to indicate that he often should not and cannot play this rôle. In the first place, he must avoid the quicksands into which the family doctor of some decades ago was often lured: the kind of situation that makes each member of the family wonder whether what he says is held in confidence—"Probably mother would have told something behind my back," or "He's so fond of my wife that he may tell her what I said to him." The way around this difficulty is to be the physician of the member of the family that comes first; to interview other members of the family only on request; never to make the mistake dramatically portrayed in Eliot's "The Cocktail Party" of revealing to two members of the family information that each thought was to be held confidential. But still the practicing psychiatrist may step into the shoes of the old family doctor in a more subtle way. Often treatment of one sick person in a family will change the family pattern. Sometimes several members of a family should be sent to different physicians, all of whom will supply information that may be useful in outlining a therapeutic program without causing anxiety.

In the space allowed, only one case illustration can be given among 50 records in

my files so similar that it would make no essential difference which one was picked.

D447: Married, white, female, age 27, with 3 children, was referred for an opinion relative to her frigidity and her agoraphobia. The psychodynamic pattern underlying these symptoms can be guessed by all of you. Here attention is called only to its pathogenic effect on the family.

This patient was very fond of the older daughter but grossly resented the boy. When she thought of her daughter, she saw her as a whole, but she could visualize only the face of her son. She appeared to be indifferent to the youngest child, a girl. Interestingly enough, the older girl, at the age of 8, and the boy, at the age of 6, still suffered from enuresis. The youngest child was completely toilet trained at the age of 16 months. When questioned about this, the mother said, "I don't really know how it happened. She trained herself, I guess. I was so busy with the others I did not pay any attention to her."

Gradually the patient came to understand that part of her trouble with her son was due to her disgust with his anatomy. She always made a face and closed her eyes when she had to take him to the bathroom. And, similarly, she had refused to allow her husband to come into the room in the nude, unless the lights were all off.

She began to realize that her behavior had been "a little silly." She was able to laugh, recovered from her frigidity; and, "miraculously," with a little additional help, her 2 older children recovered from their enuresis. This patient's husband, who had been extremely averse to her consulting anyone who had "anything to do with psychiatry," came into the office several months later to say "Thank you" and to report that, so far, the improvement in his wife and children had been maintained and that he himself "felt like a new man."

In this case, the psychiatrist was really the family doctor without seeing any of the three children or the husband. They all improved and the community relationships improved too because the husband, feeling himself a different man, was able to do a better job, and was sufficiently released from tension to do social thinking. Such happy results are often achieved, but careful recording and evaluation of a long series of them with analysis of the type of situation and the techniques used is needed. This will help psychiatrists to improve their techniques and to answer the questions raised repeatedly relative to the therapeutic success of different types of treatment and the type of case in which one or another therapeutic approach may be the method of choice.

A useful device toward this end is a preliminary note, classifying the type and seriousness of the problem presented and the nature of the therapy recommended, with reasons for the choice. This note should include also a prognosis, and an estimate of the time probably needed for treatment. Then during the course of treatment, at discharge, and with later follow-up, the psychiatrist will have a check on himself and a stimulus to discover the reasons for such discrepancies as may exist between the initial and the later impressions.

After a number of years of practice, psychiatrists will find themselves with 10 to 50 comparable cases in each of a number of categories, which if reviewed in conjunction with the material collected by colleagues would have a widespread usefulness. I, for example, have some 50 comparable office cases with frigidity, ulcer, hypertension, agoraphobia, etc., as presenting symptoms, broken down by the punch-card system into dynamic pictures. It has been interesting to compare this with the material obtained through our 18-year study and follow-up of serial admissions to Presbyterian Hospital. I am sure many of us have similar material, and were we to pool our knowledge we should be in a better position to know what we are doing and to transmit this confidence to others.

2. *Sex, Society, and the Infant*

More and more, anxious fathers and mothers-to-be, as well as patients suffering from sterility and frigidity, are being referred to the psychiatrist or simply coming on their own. Expectant parents who consult a psychiatrist for the first time are in a moment of upheaval and change. They may or may not have consulted other physicians previously and been shunted off with the statement, "You're fine; this is a perfectly normal event." Given a chance, they will reveal facts about themselves and their ancestors, and hidden worries that never seemed relevant when they asked medical advice about colds, headaches, indigestion, or even their phobias and anxieties. The physician entrusted with an obstetrical problem, perhaps more than anyone else, needs "the hearing ear and the seeing eye," and, because of his unusual opportunity, he has more than usual responsibility to take advantage of it.

Many such parents-to-be are embarrassed,

particularly if those in their immediate circle focus too much attention on what is happening. What they once regarded as their private life has become a matter of common interest, and "private parts" must be examined. Any remaining guilt relative to sexual behavior comes to the surface, so that pregnancy may become a nauseating condition in more senses than one. As a matter of fact, nausea of pregnancy often yields to relief of feelings of shame and guilt more readily than to the usually suggested medical aids. Women say frequently, "It was all right when people didn't know exactly when I slept with my husband, but now they will know almost exactly the day I did it," and so on. Many physicians help young parents-to-be with feelings such as these, but too few of them realize that the change in emotional attitudes they may bring about has significance for more than the 2 or 3 people involved. Worst of all, much of the valuable research material made readily available at this time falls by the wayside and hence only the occasional physician will apply the principles toward which it points.

There is perhaps no better opportunity to allow young people to review their relationship to society—socially, professionally, economically, and politically. They are never more eager than at this time to have their attention diverted from the question of how to produce a healthy baby to the question of how to bring up a child who will be a source of health rather than of infection to the community, and their attention should be so directed, especially since during the first 2 to 5 years they constitute almost the child's total environment. Too often the parents, like the obstetrician, feel that all of parenthood has been achieved when the baby takes his first breath. As a matter of fact, whatever the difficulties of preparation for the new potential citizen, such as preparing clothes, an extra bed, etc., by the time the child is born the job of parenthood has just begun.

The physician who has accepted the responsibility of bringing a child into the world as a matter of course makes certain that the baby is able to breathe. He may even somewhat alter the air or medium the baby breathes, if difficulties are encountered. He also attempts to protect the baby from infection, at least for the first 2 weeks. It seems to be equally appropriate, then, that he accept some responsibility for the emotional atmosphere into which the baby is born, and when possible make such alterations as are needed. Children born healthy and able to breathe, eat, sleep, may fade away or become "shrivelled and yellow" like seedlings kept too long in excellent soil in a cellar without sunlight. The family cavern into which the child is born may be difficult to modify, but a few rays of light filtering in here and there may make an important difference.

Probably there will never be enough psychiatrists to pick up all the pieces once the damage has been done but such resources as we have will go much further if all those in the private practice of psychiatry think in terms of the family and its social setting. Such thinking, whether or not other members of the family are treated or referred for treatment, will lead to the integration of therapeutic and research goals.

III. Conclusion

1. On the basis of material presented, it would appear that the psychiatrist in private practice may increase his therapeutic success and add materially to the general fund of medical knowledge if he takes advantage of his assets and trains himself, as an integral part of his therapeutic procedure, to make and record the kind of careful observation required of the research scientist.

2. In so doing, he will find himself more and more in the rôle of the doctor of the family or the social group and an active participant in such public health programs as are focussed on preventive medicine. The cure of one person may mean the elimination of a focus of infection, and the prevention of illness in one or many persons more or less intimately associated with this patient.

3. The busy psychiatrist may well select from among the many who consult him those who are parents of young children, or in positions of authority that give them control over the destiny of groups. But every therapist who studies the patient in his family and cultural setting, and looks at him as a part of a series of patients with similar complaints, will make his contribution to research.

PROPHYLACTIC ELECTROSHOCK [1]

A Five-Year Study

G. H. STEVENSON, M. D., London, Ont., and J. J. GEOGHEGAN, M. D., Guelph, Ont.

At the 1948 meeting of this Association, the authors presented an interim report(1) on prophylactic electroshock, covering the first 3 years of a proposed 5-year study. The present paper therefore continues the study to the end of the period originally planned.

Our interim report may be summarized as follows:

1. With the common knowledge that electroshock frequently brings about the early termination of certain psychotic attacks, especially those in the manic-depressive group, we assumed that, if single convulsions were precipitated by electroshock at regular monthly periods in persons subject to recurring attacks of mental illness, and after recovery from their last illness, the monthly convulsions might dissipate the accumulating tensions before they could become clinically visible as another definite attack.

2. To test the validity of this hypothesis a group of persons who had had 2 or more attacks of mental illness during the preceding 5 years, and who had recovered under electroshock, were invited to return to the hospital for a single shock once a month for the ensuing 5 years. Thirteen patients accepted the invitation. Eleven patients declined the invitation and were therefore regarded as a control group.

3. At the end of the 3-year period previously reported on, none of the cooperating group had required further mental hospital treatment. All of the control group had one or more readmissions during the same period. As the 2 groups were nearly identical, we felt justified in assuming that we had found a method that has real value for preventing recurrences in persons subject to periodic mental disorders.

Our full 5-year study confirms us in this opinion although there are certain additional points of interest that should be discussed. It should be noted that we said nothing about diagnosis in either the cooperative group or the control group. The only criterion for the inclusion in the study of any patient in the original group was that he had had 2 or more attacks of biogenic mental illness in the preceding 5 years. Naturally most of these persons had suffered from manic-depressive episodes, but several had definite schizophrenic components, *i.e.*, were schizo-affective. Although this latter group received definite benefit, prophylactic electroshock did not prevent the gradual increase of the schizoid component.

In the uncomplicated manic-depressive group this preventive technique was eminently successful. At the end of the fourth year of the study there had been no readmissions to a mental hospital of the cooperating manic-depressive group, as reported in another paper by one of us(2). However, in the fifth year of the study two cooperating persons with manic-depressive tendencies had to be readmitted for mental hospital treatment, one of whom was in the original group, the other coming into the study in its second year. All the others who cooperated to the end of the 5-year period are well, as were all other cooperating manic-depressive persons who were added to the list during the 5-year period, so long as they cooperated (see Fig. 1). Altogether we have had 28 manic-depressive patients who have cooperated with our prophylactic program for varying periods up to 5 years. Only one patient of this group died during this period, the cause of death being coronary thrombosis, and her death was quite unrelated to the electroconvulsive treatments.

It should be made clear, too, that those manic-depressive patients who cooperated for the 5-year period did not actually receive a prophylactic shock every month of the 5 years. Fig. 2 shows the prophylactic shocks received by 2 patients who had had 4 previous attacks of mental illness and who have remained well during the 5 years of this study. One of these patients had a long

[1] Read at the 106th annual meeting of The American Psychiatric Association, Detroit, Mich., May 1-5, 1950.

interval without prophylactic shocks, but when she began to feel less well than usual, was persuaded to resume. The other patient sustained accidental injuries that made it impossible for her to receive the prophylactic shocks for several months. As soon as she recovered sufficiently from her accident, she resumed the prophylactic shocks.

The two cooperating patients who required further hospitalization emphasize the need for adequate social readjustment along with the prophylactic shock. One of these patients had had several previous attacks of mental illness, which had resulted in the need of a housekeeper in the home, who remained on after the patient's recovery from each attack. The patient's husband had allowed this housekeeper to usurp his wife's authority and perhaps other of the wife's prerogatives, leaving the wife with constant jealousy and frustration. It has been our observation that unsolved and unsolvable frustrations are usually important etiologic factors in manic-depressive psychosis, and prophylactic electroshock can hardly be expected to prevent recurrences so long as constant frustration is present.

The other failure in the manic-depressive group was a young woman who in childhood had suffered a crippling poliomyelitis, to which she never had adjusted, and she was constantly aware that her family regarded her as an expense and a liability. Prophylactic electroshock could not overcome this chronic frustration.

	Preprophylactic period: 5 years					Prophylactic period: 5 years				
	Mental illnesses					Mental illnesses				
1. W. G.	+	..	+	..	+	..	..	..	..	..
2. O. H.	+	..	..	+	+	..	..	..	..	..
3. E. B.	..	+	+	+	+	..	..	..	Died	..
4. M. C.	+	+	..	+	+	..	..	..	..	..
5. A. D.	+	..	..	+	+	..	..	..	..	..
6. A. L.	+	..	..	..	+	..	..	..	..	..
7. G. M.	+	..	..	+	+	..	..	..	..	..
8. D. McT.	..	..	+	..	+	..	..	..	..	..
9. C. N.	+	..	..	+	+	..	..	..	..	+
10. A. R.	+	..	+	..	+	..	..	..	..	..
11. A. S.	..	..	..	+	+	..	..	..	+	..
12. O. W.	+	..	+	..	+	..	..	..	..	..
13. H. H.	..	..	+	+	+	..	..	..	+	..

FIG. 1.—Results of prophylactic electroshock in a group of patients who received continuous single monthly shocks after recovery from last illness shown.

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.
A. R.												
1945			I	I	I	I	I	I	I	I	I	
1946	I	I	I	I	I	I	I	I	I	I	I	I
1947	I		I		I	I			I			
1948	I						I			I		
1949	I								I	I	I	I
M. C.												
1945	I	I	I	I	I	I	I	I			I	I
1946	I	I	I	I	I	I	I	I			I	I
1947												
1948											I	I
1949	I	I	I	I	I		I				I	

FIG. 2.—Actual prophylactic shocks received by two patients.

Our greatest difficulty in the carrying out of this prophylactic program was to persuade the cooperative patients to come regularly each month for the single electroconvulsion. This reluctance is quite understandable, and intensive efforts by our aftercare department were needed frequently to persuade certain patients to continue the program. This difficulty rested on two main points: (1) the unwarranted optimism of manic-depressive patients that they have had their last attack, and (2) the unpleasant prospect of the electrotherapy on an indefinitely prolonged basis month by month. The first of these points calls for firmness on the part of the psychiatrist as to the necessity for the regular monthly convulsion (although we do not insist on unvarying monthly attendance, especially if the patient is planning a vacation or has some other good reason for the occasional nonappearance). The second point emphasizes the need for making the monthly shock as agreeable as possible to relieve the patient of unpleasant memories or future anxiety.

While this study was in progress we were carrying on a prefrontal lobotomy program on a selective basis. Among the group selected for lobotomy were 9 patients who suffered such frequent or continuous manic or depressive attacks that continuous hospitalization was necessary. Electroshock would improve such patients but they could not be held at a satisfactory level of good mental health. In 7 cases the lobotomy led to a cessation of the manic or depressive attacks and ability to leave the hospital. This group is referred to here, not that it has any relationship to prophylactic electroshock, but because we learned that some patients with frequently recurring attacks of manic-depressive psychosis can be brought back to normal mental health by another therapeutic device, namely lobotomy. It remains to be seen whether such persons will remain well permanently. In any event they should be kept under close scrutiny and if there are indications at any time of a return of symptoms, electroshock should be resorted to immediately.

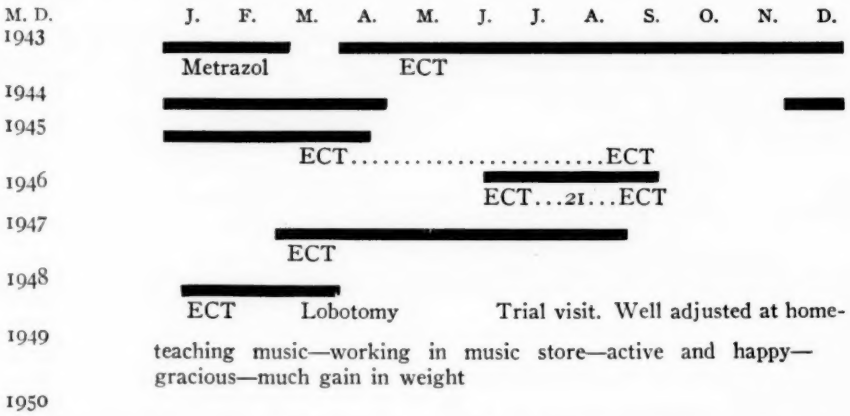

FIG. 3.—M. D., female, single, 41. Admitted to Ontario Hospital, London, Dec. 16, 1942. Diagnosis: manic-depressive depression. Previous attack 1932. Repeated periods of agitation, would crave forgiveness. Helped transiently by convulsive therapy, but never to the point of stabilized recovery. *Lobotomy April 29, 1948. Trial visit June 23, 1948.* Clinical recovery. Shortly after leaving hospital secured a position as saleswoman in a musical supplies shop. Considered to be a very valuable member of staff. No recurrence of symptoms.

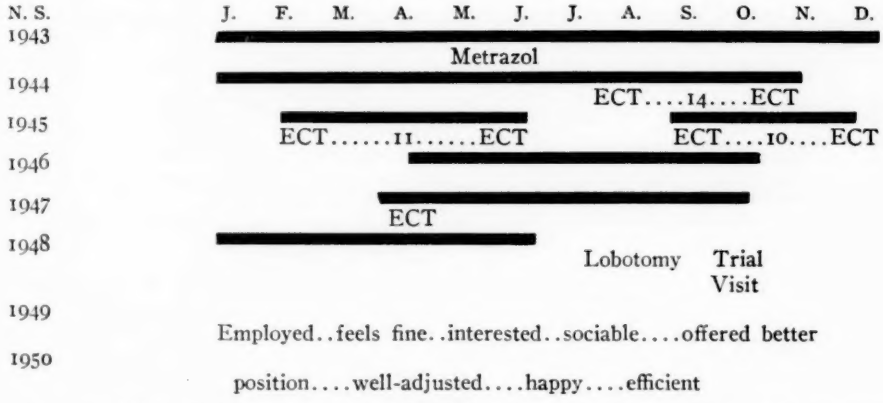

FIG. 4.—N. S., female, single, 57. Admitted Ontario Hospital, London, Jan. 11, 1943. Diagnosis: manic-depressive depression. Acutely depressed. Repeated attacks of depression while in hospital, improved temporarily by electroshock but followed by early relapse. *Unilateral lobotomy July 22, 1948. Trial visit Nov. 3, 1948.* Recovered. Shortly afterwards secured employment. Has since been gainfully and happily employed. No recurrence of symptoms. Recently was offered the managership of her company's office in another city.

Figs. 3-6 demonstrate successful outcome

in 4 of these lobotomized frequently recurring or continuing manic-depressive patients.

Still another helpful device came to light during this study, by which some manic-depressive patients can be saved the distress of repeated attacks. This consists in keeping a recovered patient under good supervision and, at the first sign of recurring manic or depressive symptoms, instituting vigorous electrotherapy. Our best example of the prevention of recurrences by this method is the patient shown in Fig. 7, who had severe manic attacks for several months in each of 20 consecutive years. Although the results in this case were remarkably good, they were possible only because the patient continued to reside in the hospital where, of course, she was under constant medical and nursing supervision. If the patient had been residing away from the hospital, symptoms might have gained considerable headway before appropriate therapy could have been instituted.

Nevertheless this method should be of real

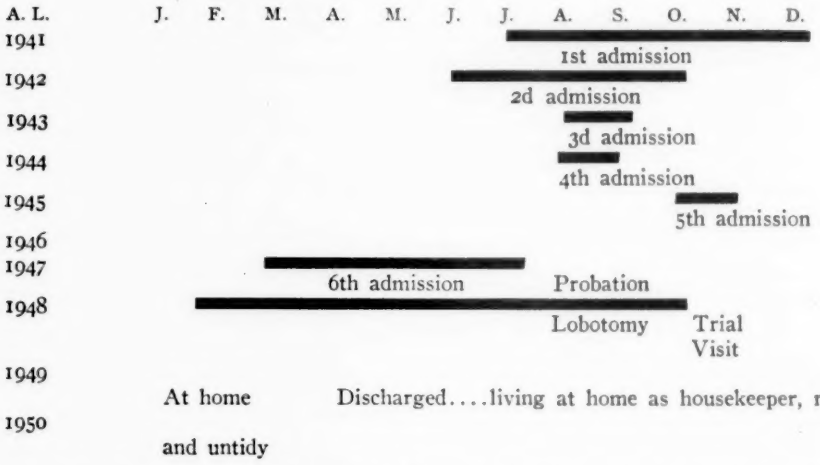

FIG. 5.—A. L., female, married, 54. Admitted Ontario Hospital, London, March 6, 1947 (6th admission). Diagnosis: manic-depressive, recurring manic attacks. First admission 1941. Note there were 6 admissions to hospital between 1941 and 1947, as well as several trial visits, from all of which she relapsed. Was recommended for prophylactic electroshock but declined the offer. *Lobotomy August 26, 1948. Home visit October 24, 1948.* Showed some postlobotomy apathy, reflected in her indifferent housekeeping. Has had no further attacks of excitement, however, and has been able to remain at home, although living conditions not too satisfactory. Husband not a good provider and probably one of the causes of her previous mental illnesses.

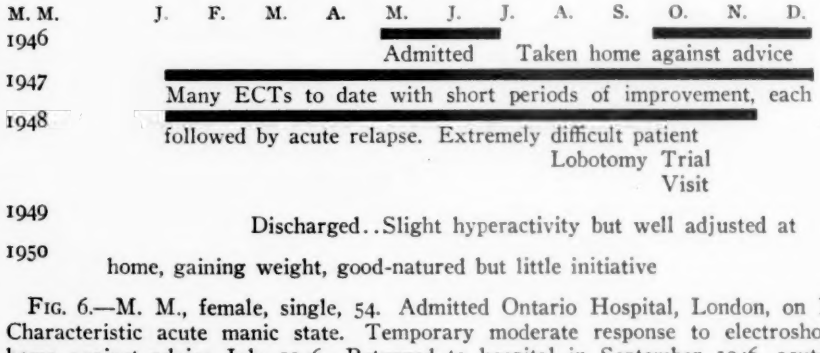
M. M.
J. F. M. A. M. J. J. A. S. O. N. D.
1946
Admitted
Taken home against advice
1947
Many ECTs to date with short periods of improvement, each
1948
followed by acute relapse. Extremely difficult patient
Lobotomy
Trial Visit
1949
Discharged..Slight hyperactivity but well adjusted at home, gaining weight, good-natured but little initiative
1950

FIG. 6.—M. M., female, single, 54. Admitted Ontario Hospital, London, on May 15, 1946. Characteristic acute manic state. Temporary moderate response to electroshock and taken home against advice July 1946. Returned to hospital in September 1946, acutely manic. In spite of intensive therapy continued aggressive and extremely difficult. Lobotomy August 1948. Immediate improvement. Trial visit the following month. Has gained steadily in all aspects of health although not yet employed. She is happy at home and family are well pleased.

value in those patients who have a manic-depressive attack only at long intervals (5 years or longer), where neither prophylactic electroshock nor lobotomy would appear to be justified.

DISCUSSION

In this paper and its preceding report we have described a technique that we call prophylactic electroshock, which has as its objective the prevention of recurring episodic mental disorders. We believe we have demonstrated that this technique will, in most cooperative patients, prevent the recurrence of manic and depressive episodes but is much less efficient in preventing schizophrenic episodes.

Concurrent studies have demonstrated that the tendency to very frequent manic-depressive episodes can also in selected cases be broken up by prefrontal lobotomy.

Certain other patients with recurring manic-depressive attacks may have such attacks aborted by the application of intensive electroshock at the first appearance of beginning symptoms.

This paper might have had as a subtitle "The prevention of recurring manic and depressive attacks." The usual psychiatric textbook pessimism about the likelihood of recurrences in manic-depressive psychosis is no longer warranted. Prevention of such recurring attacks requires good cooperation of the patient and his relatives, the intelligent application of the newer psychiatric therapies, and thorough aftercare supervision.

We suggest that prophylactic electroshock treatments be administered at monthly intervals for a 5-year period, after which the intervals might be lengthened to 2 months, later to 3 months, and finally to 6 months.

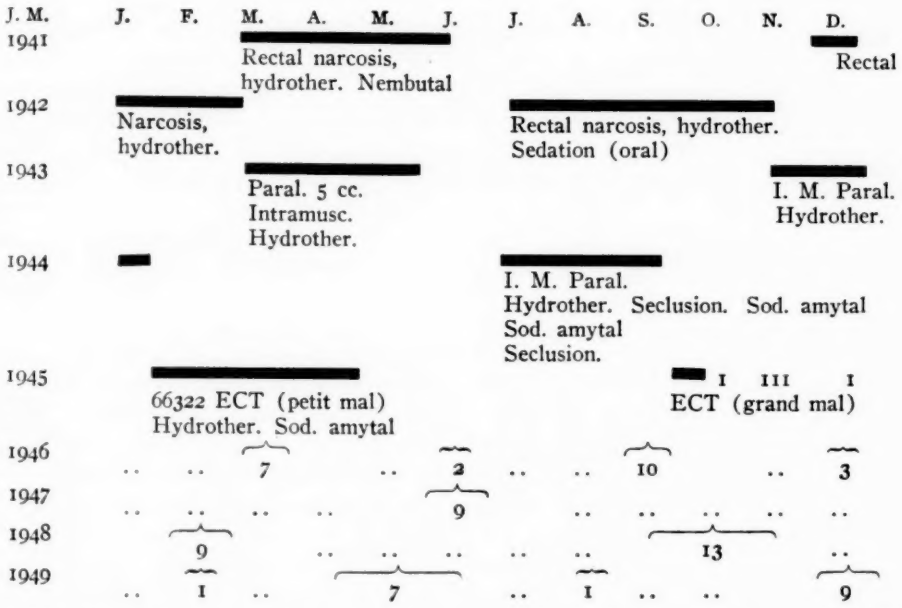

FIG. 7.—J. M., female. Subclinical attacks of mental illness under electroshock. Numbers refer to number of shock treatments given.

CONCLUSIONS

1. Recurring manic-depressive illnesses can frequently be prevented by the technique of prophylactic electroshock.

2. Persons whose manic-depressive illnesses are very prolonged or frequently recurrent, and who do not respond adequately to electroshock, may respond to prefrontal lobotomy.

3. Persons whose attacks are very infrequent may have such attacks aborted by the intensive application of electroshock at the first appearance of prodromal symptoms.

4. Failures of prophylactic electroshock are more likely to occur when the patient is faced with insoluble frustrating environmental factors. Hence the need for adequate social psychotherapy.

5. Because of the dislike many patients have for electroshock every effort should be put forth to make the prophylactic electroshock as free as possible from unpleasant features.

6. Good aftercare is essential.

7. Prophylactic electroshock is of limited value in recurring schizophrenic illnesses.

BIBLIOGRAPHY

1. Geoghegan, J. J., and Stevenson, G. H. Prophylactic electroshock. Am. J. Psychiat., **105**: 494, Jan. 1949.

2. Stevenson, G. H. Armchair psychiatry. Psychiat. Quart., **23**: 71, Jan. 1949.

THE ILLNESS OF FRANCIS PARKMAN[1]

LOUIS CASAMAJOR, M. D., New York, N. Y.

Many geniuses have been sick—at least they had something the matter with them. Gould has collected quite a galaxy of them including DeQuincey, Thomas Carlyle, Darwin, Huxley, Browning, Wagner, Herbert Spencer and George Eliot. All these people spent a good deal of their time in illness. The incidence of epilepsy among geniuses and near-geniuses has always been much higher than in the general population. Jacobson in his study of genius lays stress on the importance of tuberculosis and alcoholism in its make-up. Admittedly most of the authors have a theory to prove and not infrequently they stretch facts pretty far to make them fit into the theory. Neurosis has so often been observed in writers and artists that one hardly thinks of it as a cause of the drive to create that it undoubtedly frequently is. Francis Parkman offers much of interest from this point of view and there are considerable data in existence on which one can base an opinion in spite of the fact that Parkman has been dead more than 50 years.

Francis Parkman, Jr., was born in Boston on Beacon Hill, September 16, 1823. "He was born of the purple with a golden spoon in his mouth" (Wade). He was one of those who are today known in the overworked phrase as "a Boston Brahmin." His father was a minister of the gospel and the whole family had belonged to the elite for generations. He was a wealthy man and never had to work for a living and he early started to write on American history. He is known best by his books, "The Conspiracy of Pontiac" and "The Oregon Trail."

Parkman was one of three children with an older brother and sister. He is said to have been "a headachey child" even when small. He was surrounded for most of his life by adoring women relatives who pampered him and followed his least wishes as law. "Such a situation," says Wade, "is not the healthiest for a person with neurotic potentialities and these Parkman clearly had."

Parkman entered Harvard in 1840. There he was not especially marked for scholarship. At first he was very much interested in athletics. "He craved bodily exercise so as to acquire the utmost strength, agility and endurance" (Gould). This kept up until his junior year when he had a sudden collapse and had to go to Europe for his health. Nothing is known of what symptoms he had at this time.

After a summer in Europe he returned to Harvard and was graduated in 1844. After graduation he entered the Harvard Law School and again went in for the strenuous life. He arose early every morning to indulge in hard riding before going to his classes and he studied far into the night by candlelight. After a year of this he was confined to the house "by some sickness" for the whole winter and had to have his lessons read to him. This is the first appearance of vision difficulty. In some way this incapacitating illness passed away and he spent the following summer tramping alone over the hills of western Massachusetts.

In 1846 he received his LL.B. from Harvard and by that time he had collected much of the material for his history of the conspiracy of Pontiac. In April of that year he went to St. Louis and then on over the Oregon trail. There he had plenty of trouble.

An attack of dysentery nearly laid him low and his sight bothered him a good deal. He reports that when he was almost too weak to sit in the saddle he found the tonic of the chase enabled him to hunt buffalo over broken country. One may doubt the physical nature of his weakness.

When he returned to civilization his dysentery cleared up but his sight and other symptoms grew worse. "To the maladies of the prairie succeeded a suite of exhausting disorders so reducing him that circulation at the extremities ceased, the light of the sun became insupportable and a wild whirl possessed his brain joined to a universal turmoil of the nervous system which put his philosophy to the sharpest test it had hitherto known. All collapsed in short but the tena-

[1] Read before The Vidonia Club, April 28, 1950.

cious strength of muscles hardened by long activity. This condition was progressive and did not reach its height, or to speak more fitly, its depth until some eighteen months after his return."

In November 1846 Parkman came to New York to consult an eye specialist who had considerable renown among the elite of Boston. This was a Dr. S. M. Elliot who was practicing in West New Brighton, Staten Island. Among his patients were Charles A. Dana, Longfellow, James Russell Lowell and his father as well as Parkman and his sister. There is no record of what Dr. Elliot thought of Parkman's case nor of what he did for him. We do know that while he was in New York for treatment by Dr. Elliot on Staten Island Parkman lived at Delmonico's Hotel and occupied himself with law in the courts and in the office of Mr. Lord on lower Broadway.

It would be interesting to know more about this period. Parkman rebelled against the slow course of Dr. Elliot's cure and spoke of the "wearisome treatments," whatever they may have been. In the late summer of 1847 he went to Brattleboro, Vt., to take a water-cure that did him no good.

From this time on the eye symptoms became more prominent so that they dominated the clinical picture. He devised a gridiron of wires in a frame so he could keep his writing on a line, but even with this help he was able to write only about six lines a day. At times he could not use his eyes even to sign his name. On these occasions he would look off at a distance to rest his eyes. Although looking at a distance eased him, while dictating he was in the habit of holding a screen in front of his eyes. He never looked at anyone or anything steadily.

Interestingly and probably diagnostically, being read to seemed to have the same effect as reading. Often he would stop his reader with the remark his head was "all stirred up." He would complain of a feeling as of an iron band around his head, vague anxieties, "whirl," "confusions," "strange indefinite tortures," symptoms more familiar to psychiatrists than to ophthalmologists. "When it was impossible for him to listen longer to reading, or to conversation or to apply himself to any work he seemed to find relief in inventing a string of nonsensical or ridiculous stories" (Gould).

When Parkman found he no longer could use his eyes for writing he took up gardening. Here another set of symptoms bothered him, a lameness that is sometimes referred to as arthritis and at others as synovitis. This symptom was not more constant than were those of his eyes. Farnham, his official biographer and former secretary, reports, "When able to walk he would go at a rapid gait from place to place and sit down on a stool carried for the purpose"; "he would then do some light work." Some of his gardening work he did from a wheel chair. In spite of the sensitiveness of his eyes, he enjoyed being out in the sun in his garden and enjoyed his reputation as a successful grower of flowers.

After the death of Parkman's wife in 1860 he suffered his most serious breakdown, and he returned to Paris where he had been two years before to go under treatment by Dr. Brown-Séquard. The latter was no ophthalmologist; he considered Parkman's trouble as purely mental and he suspected that he was developing insanity. Brown-Séquard's treatments were certainly not directed toward any eye condition. He was given bicarbonate of soda and wet packs, tonics, milk diet, and galvanism. He was scarred behind the neck with nitric acid and red hot irons were passed along his spine. These were the psychotherapies of the day. Farnham states, "His general troubles were believed to come from an abnormal state or partial paralysis of certain arteries of the brain." That was probably as close as a neurophysiologist of those days could come to psychogenesis.

As Parkman got older his eye symptoms appeared to bother him less and less but what he calls "cerebral revolutions" still continued from time to time. He reports in a letter to a friend: "It has its ebb and flow. Slight and sometimes imperceptible causes would cause an access which sometimes lasted without respite for months. I could not listen to reading nor engage in conversation even of the lightest." When he could not sleep he used to wander around on the Boston Common "watching policemen and tramps." "Toward the end of the night this cerebral excitation would give place to a

condition of weight and oppression much easier to bear."

As Parkman went on toward the end of his life there was little evidence of his symptoms. Presbyopia seemed to work wonders with his eyes. One finds little reference now to the photophobia and blepharospasm that often dominated the picture in his early life. In writing to Wier Mitchell in November 1883 he makes no mention of eye symptoms but complains of insomina, throbbing in the ear at night, exhaustion, "nerves set on edge," and "palpitation of the heart which I have reason to believe is not from organic causes." At 60 he was said still to be a fair shot and enjoyed fly fishing. Parkman died on November 8, 1893, at 70 years of age after a 3 days' illness.

In interpreting all this it must be remembered that the data are all subjective and come almost entirely from the patient himself. There is practically nothing of an objective nature in the record. It would be interesting if we could know what Dr. Elliot thought of him but there are no records. Gould found some prescriptions for glasses given Parkman later that do not show much that is pathological in his eyes. One prescription dated April 12, 1881, when Parkman was 58 years old called for O.D + sphere 2 D; + cylinder 0.05 axis 108°; O.S. + sphere 2.75 D. A fundus examination at the time was reported as normal.

Farnham believed in the reality of the symptoms and when Gould wrote in 1904 he was sure of it. His summary was "hyperopic astigmatism probably unsymmetrical with anisometropia." Also Gould remarks, "There was no organic disease of the eyes. He saw as well at night as other people. He recognized things and people so accurately in the day time that one may be sure there was no considerable amblyopia, or other limitation or organically caused defect of vision." In spite of all this Gould stoutly maintained that vision defect was the cause of all his symptoms. He scoffs at the possibility of neurosis.

But Gould was a biased observer. DeVoto calls him "a monomaniac" on the subject of asymmetrical compound astigmatism, which is very little of an exaggeration. Gould's bias is well shown by his remark in the introduction that "neurasthenia, anaemia, anorexia, chorea and epilepsy may or may not be due to eye strain." He even blames Nietzsche's psychosis on eye strain alone although modern German psychiatry admits his psychosis was general paresis.

Mason Wade submitted Gould's evidence to the ophthalmic group at Dartmouth and they suggested the condition might have been aniseikonia. One wonders whether the Dartmouth eye group may not be as prejudiced in favor of aniseikonia as Gould was for compound astigmatism.

Over the years the possibility of psychoneurosis stands out more prominently in the reports. Wade admits that he clearly had neurotic potentialities. A professor of ophthalmology, whom DeVoto consulted, discussed all the eye troubles as neurotic.

In evaluating the condition it may be of aid to reconstruct the medical atmosphere in which the symptoms were first investigated. In 1846 when Parkman first came to New York for medical care of his eyes American medicine was undergoing great changes. The reaction against bleeding as a universal cure was rapidly reaching its apex, and many quackeries were being accepted on an equal basis with what was considered regular and respectable medicine. In New York Dr. Shew and his various water cures were enjoying great repute. Dr. Graham, an early food faddist, whose name persists in the Graham crackers children like to nibble on, had a large and enthusiastic following. Medicine was still entirely an art. Pasteur was a young teacher of physics in an obscure French college and had not yet started the experiments that were to lay the foundations for a science of medicine.

Psychiatry was nonexistent. The very name had not yet been admitted to any dictionary of the English language. It is true that 2 years before this 13 men had met in Philadelphia to form what 77 years later was to become The American Psychiatric Association. However, it was still The Association of Medical Superintendents of American Institutions for the Insane, a long and unwieldly name that undoubtedly reflects psychiatrists' deep-seated love of verbosity.

Nothing could have been known or suspected about neurosis in those days. Thirty

years were to pass before Dr. Charles A. Beard was to call the profession's attention to psychic factors as a cause for symptoms and to invent the word "neurasthenia" to place his ideas before a skeptical medical world.

Francis Parkman's illness could not be diagnosed as psychoneurosis during his life. Going over his symptoms to-day, however, one can easily fit them into that category. In the first place it seems to be agreed that there was no physical basis for the symptoms. The symptoms themselves were as protean as one expects in hysteria; they fluctuated in the psychoneurotic manner and, as time went on, they grew and elaborated as all deep-seated neuroses do. They started with eye signs that were never consistent. He could not see to read or even to sign his name. Yet with this he would rest his eyes by looking off in a distance. Photophobia forced him to stay in dark rooms, yet he was an enthusiastic gardener and could work in his garden by the hour. Although he used to look into the distance to ease his eyes he could not look at people for any length of time. When dictating he would hold a screen before his eyes. What that did for his eyes is difficult to evaluate from an eye point of view. It is said that he could not go out to walk except at twilight, yet he could work in his garden during the day.

As he grew older his neurosis grew with him. He took to writing on orange-colored paper. He complained of anxiety symptoms and such common ones as a sensation of an iron band around his head and palpitation of the heart. At first he could not read and later he could not be read to without having his "head stirred up." Surely this could not have been due to any eye condition when his ears were the only source of his getting information. And when this would occur he was in the habit of neutralizing it not by looking off in the distance as he previously had but by the purely psychic mechanism of inventing ridiculous and nonsensical stories—mechanism of diversion.

The history does not present enough evidence to evaluate his lameness properly. This has been called arthritis but as a symptom it does not seem to have been more consistent than those referable to his eyes. Although he worked around his garden in a wheel chair, sometimes he would get up and walk rapidly until he had to sit down on a stool that he carried for the purpose—probably when he remembered he was a cripple and could not walk.

There is little in the record of what Brown-Séquard thought of him. I take it that the diagnosis Farnham spoke of—"an abnormal state or partial paralysis of certain arteries of the brain"—was Brown-Séquard's. That might have meant something in Brown-Séquard's time but in reality it is pure nonsense. Probably to whoever made it it meant nothing more than that the diagnostician believed that there was something wrong with Parkman's mind or brain.

What Brown-Séquard treated Parkman for was not his eyes. The condition had gone far beyond that. The emotional factor of the death of his wife and children had induced a mental state that quite overshadowed the eye symptoms. To Brown-Séquard he was a mental case and one in danger of becoming insane. He never became insane, for what he had when Brown-Séquard saw him was undoubtedly a rather severe anxiety and conversion hysteria that could not be differentiated from a psychosis at the time and hence had to be grouped in the vague category of insanity.

It is possible that Francis Parkman had something the matter with his eyes, although the evidence is very doubtful, but if he did have real eye symptoms they were only a peg on which was hung a rather severe mixed neurosis.

BIBLIOGRAPHY

Adams, G., and Hunter, E. The Mad Forties. New York, 1942.

Deutsch, A. The Mentally Ill in America. New York, 1937.

DeVoto, B. The Year of Decision 1846. Boston, 1943.

Farnham, C. H. A Life of Francis Parkman. Boston, 1900.

Gould, G. M. Biographical Clinics, Vol. II. Philadelphia, 1904.

Jacobson, A. C. Genius—Some Revaluations. New York, 1926.

Wade, M. Francis Parkman, Heroic Historian. New York, 1942.

CLINICAL REALITY AND PROJECTIVE TECHNIQUE [1]

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In the course of the past half century, projective techniques as a functional part of psychiatry and psychology have sprung from the fertile soil of the creators' intellects until at present, like promises of politicians, they would seem to overwhelm us with evidences of their achievements, indications of their requisite nature in our very survival and forthright assurances of their successful futures—futures that might not possibly, but might just as well, result in the taking over by such methods of our abilities to think and diagnose and perhaps to treat our patients as doctors are expected to do.

This abundance of techniques is rapidly becoming like Midas' touch—a golden glow of promise hardening into uncontrolled discomfort. The history of the most established technique is typical of the group.

In 1921 a youthful Swiss psychiatrist published a volume called *Psychodiagnostics,* which reported an experiment consisting of the interpretation of accidental forms. The author, Herman Rorschach(1), believed that "the interpretation of chance forms falls in the field of perception and appreciation rather than imagination" and differentiated between perceptions and interpretations of his stimulus blots "on a basis of theoretical perceptive thresholds." He felt these differences were dependent on individual factors, not general ones, and "that there is no sharp delineation but a gradual shifting of emphasis." In his experiment he pointed to certain components arbitrarily to focus attention on various aspects of this emphasis, but at all times he remained acutely aware that the total pattern represented the interrelationships, not the labels.

Nearly three decades have passed and we find that in this period—after the usual lag common to scientific communication—feverish activity stimulated by man's increasing focus on things psychological and probably also pushed by his overvalued need for new and frequent written communication has yielded improvements, modifications, refinements, and additions, which permit the original experiment to be undertaken now individually or en masse, and promise for its future success unparalleled except by the slightly similar offers found on the labels of certain patent nostrums and cure-alls.

Rorschach today would still recognize the cards. Brilliant though he was, I doubt if he could find time to read the voluminous literature which is well enroute to the thousand mark. I am certain that, if he could, he would be startled that from his little experiment "following the 'scoring' of the responses, there emerge invaluable facts relating specifically to the way in which the patient sees his world, approaches and handles it, and of what this world consists. His anxieties and insecurities, his hurts and wishes, his fictions, his needs, his assets and liabilities, his likes and dislikes—all of these and more emerge to be viewed by the examiner. Moreover, the pattern reveals also the meaning of these things to him, the configuration of his personality which thus results, and the motivations of his behavior. It, furthermore, aids in differential diagnosis particularly between the organic and functional types of illness, and among the affect and content disorders. The expert examiner can also obtain from the response record a practical estimation of such important personality features as intellectual efficiency, emotional maturity and balance, and degree and depth of reality acceptance. Finally, the procedure serves as a guide to therapy and an index of its success or failure"(2).

This substitution of Rorschach method for psychiatry is more real than written and it is commonplace to watch psychiatrists in training base their opinion on the Rorschach report rather than on their own observations. This is, of course, in line with the general medical trend of using "objective tests," which though obviously dependent on the technical ability and interpretative skill of their employer still save us much

[1] Read at the 106th annual meeting of The American Psychiatric Association, Detroit, Mich., May 1-5, 1950.

From the School of Criminology of the University of California, Berkeley.

time, and especially relieve us from the forgotten art of using our own eyes and hands and ears and brain as adjuvants to diagnosis.

Of course, not all the reports are too helpful. The technical language developed with different workers contributing to the multiordinal meanings of what should be specific symbols requires constant translation within the method itself and frequently baffles the expert unless he knows all the systems. Of course the rugged individualist also adds to the chaos by introducing new modifications that employ old terms freshened up with new meanings: a technique guaranteed to prevent communication, but one not unusual—even among psychiatrists.

Assuming, however, that we can understand the language, we next encounter such curious word mixtures describing personality traits as in the case of a 13-year-old boy:

He is self-conscious, which is not uncommon in adolescence, probably has inadequacy feelings, and slight depressions. He is not constricted, and is much influenced by outside stimuli.

The record indicates a lack of identification. There is an inability to sublimate his drives into creative activities. His extraversive affective energy is not balanced by inner living. Since his drives flow into overt expression and the inner controls are absent, overt misbehavior may be anticipated. He has the ability to respond to outside stimuli in a controlled and well-adjusted way, but when irritated he may become aggressive, and regress to infantile reactions.

It seems that his extraversive tendencies are over-expanded, which means that his accentuated extraversion does not seem a genuine one but may have its causes in the suppressed inner life. He is ambitious, but his ambitions are not based on his present capacities for achievement. There are signs of anxiety, and there is strong evidence of lack of basically secure and growth-inducing relationships. There are some signs of possible enuresis and of sexual problems(3).

In comparison with the above, let me read you a few lines taken from a 35¢ horoscope book that simulate well such pseudoscientific jargon (I have added the Rorschach equivalents so that readers trained in this language will understand):

An individual demonstrating a good inner life and good color form control (High M&FC) might well be equated with the Ares person—"You seem to know things without being told. You love to be in a free atmosphere and everything must harmonize with your surroundings. You are some times too sensitive and allow yourself to be affected too much by your emotions"—a little extra Fc.

An over-abundance of C is demonstrated in people born in the next period. "You are emotional and impulsive and frequently mistake a show of affection on the part of others for genuine friendship. You are fearless and kind, and good but are somewhat too sensitive."

These persons also seem overwhelmed with shading reactions. "You take things too much to heart and are too apt to worry about things that will never bother you. You worry about the future and wish to be comfortably situated and enjoy the good things in life."

This inner anxiety disappears in people born under Gemini who apparently have a fair amount of M without good inner control. "Your imagination is very vivid. If you were to tell your imaginations, you would scare some people. You will overcome many obstacles and experience many ups and downs in life."

People born in the next period, Cancer, apparently have an orderly approach (High F+) and are coarted and would "make good bookkeepers and are very orderly. They will also do well in banking, real estate or large wholesale house, but it is foolish for them to engage in any work in which they cannot willingly put their hearts."

People born under Libra have apparently a good F component. "Their judgment is excellent, they have good ability and are self-reliant. While their results are fair, at times, however, they are not always what they should be."

Sagittarius produces personalities with apparently an overabundance of pure C—fire and blood responses. "These people are active in mind and body, bold, fearless, impulsive and too quick at times for their own good. They are inclined to be people of actions rather than words and decide matters without due consideration. They are high tempered and will not stand for anyone hurting their own feelings."

Finally, the group born under Pisces are most typical of the type of ambiequal who is somewhat introtensive but also extratensive, in that they are "positive and possess a clean, logical mind, and are active in mind and body." Simultaneously, they also "are lacking in self-confidence in all of their undertakings."

The trick of writing either horoscopes or similar Rorschach reports lies in the use of generalities, multiordinal terms, superficial description, and temperament depictions that can apply to anybody. If enough is put down and covers all aspects some of it is bound to be right. In the horoscope the method is deliberate. In the Rorschach it has developed as a result of the great focus on the method by psychologists and psychiatrists who were never adequately trained in clinical psychiatric method. When a Rorschach report reads like a horoscope don't use it!

I stress this point since it is my notion

that the error lies not in the Rorschach technique, but in the people who use it. No real clinician working with the method has ever employed it in any but an adjuvant fashion as he does his percussion hammer or his stethoscope. It is true that these aids have been modified—I have a collection of some 30 odd hammers varying in size, weight, shape, composition, and country of origin. Some of them are claimed by their inventors to possess qualities of function superseding older types. But nobody has seriously tried to make a science of percussion hammers. Their use is studied, books on reflexes are written, arguments develop, etc., but their place in the diagnostic scheme remains fixed.

The projective techniques are different. Owing to their very nature they permit projection, not only by the patient but also by the interpreter. Nowhere is this more obvious than in Rorschach content analysis. Such methods are of great value to psychiatry when properly applied by competent workers cognizant of their limitations. The original method of Rorschach has been proved to yield specific information, frequently unobtainable otherwise except by prolonged psychoanalytical study in a relatively short time. Its major values show at their best in cases of psychopathology—the area of function for which it was designed. In this field it acts to depict the clinical realities confronting the psychiatrists. If the case is clear cut, so will be the Rorschach. If the problem is mixed—as are most—the Rorschach will reflect the admixture of personality components. By manipulating our scores and our ratios, we focus as did Rorschach on certain emphasis of components that may be of considerable value in contributing to the whole picture. We must never forget, though, that these emphases are man-made and empirical. As such they are definitely and frequently fallible.

In my practice I always do a Rorschach—preferably before the psychiatric interview just to prevent strain on my intellectual honesty. Then, when all data are compiled, if the Rorschach indications agree with the clinical data, I feel a bit surer of my position. Disagreement is merely an indication for repeat surveys of all methods used until the cause of the discrepancy is elicited. No attempt to make a specific diagnosis using formal psychiatric nosology is ever attempted from the Rorschach or any other single method alone. There are no true pathognomonic signs in the Rorschach method, and no systems of sign sets or patterns can be held to be specific. As a matter of fact, the creators of such sign-groups never have held such an untenable notion. But many students lulled by the false security of statistical patterns believe in such groupings implicitly. They go along with the general notion that being unable to name a clinical pattern is bad and produces intellectual discomfort. Accurate nosological skill parallels education. If you know a synonym, you're an expert!

At this point let me again emphasize my own feelings as to the great value of this method properly used. I would disagree most emphatically with the recent papers of Johnson and Sherman(4) and of Young(5) that imply that this use is easy. The first pair of authors startle one with the statement that "unfortunately, very few psychiatrists have written on this subject, most of the work having been done by psychologists."

I am unable, of course, to estimate the wealth of their reading sample. Mayhap they tried to encompass the whole of the literature with the result that William Penn foretold: "Much reading is an oppression of the mind and extinguishes the natural candle, which is the reason of so many senseless scholars in the world." Aside from the self-evident fact, that psychiatrists have published papers far in excess of these authors' cognizance, let me suggest that neither psychiatrists nor psychologists are necessarily immune from lack of knowledge. Ignorance is of course permissible, but should not be publishable. Examples from this article show that in the organic reaction type—whatever that is—W's are poor, M & C diminished, perseveration is marked, low P's and poor F's are common. I have found this picture in my limited experience, compared to their quoted 3,000 cases, occurring in low average normals, depressives, varieties of dementia præcox, and indeed most everywhere. These authors find, however, that "the entire picture of an organic Rorschach can hardly be confused." They have a chart to "prove"

this. This verbal map—bearing little or no relation to reality—also differentially diagnoses the other major mental ills in a similarly simple fashion.

The other author, R. J. Young, has now published two articles on the technique in the past year and a half. Alexander Pope describes his work as though he'd read it—

> "Such laboured nothing's in so strange a style
> Amaze the unlearned and make the learned smile."

As an example of his new notions, he writes:

> To many psychiatrists the number of symbols used by the Rorschachist is confusing and, as a result, they show little interest in reading about this subject. It has definitely been the purpose in this paper to refrain from symbols and to present material in a way that psychiatrists not intimately acquainted with the test may readily comprehend how the diagnosis of mental diseases by this technique is arrived at. It is essentially a laboratory tool in a similar category with the Binet-Simon or the electroencephalogram. The Rorschach test should be used more frequently as it has a definite value to the psychiatrist in differential diagnosis, although many have been reluctant to accept it.

This belief that psychiatrists are at best infantile, requiring spoon-feeding, is indicated in other statements as, "schizophrenics are relatively easy to detect," and the "diagnosis of the psychoneuroses by the Rorschach test has been well developed and essentially hinges on the way the patient responds to the color cards."

Surely no one who has not fixed in the narcissistic period can accept such claims for all-encompassing results. Such reports belong in beginner's notes—not in professional journals where it is assumed, erroneously I fear, that the printed word carries truth instead of misevaluation, childish dreams, and immature concepts. I would return the author to further counsel from Pope about "a little learning"—stressing the last lines of the couplet:

> "There shallow draughts intoxicate the brain
> And drinking deeply sobers us again."

The Rorschach method has come fast in the 29 years of its existence. Whether it has come far is harder to say. We still have little notion as to why it seems to work—theories yes, by the pound, but facts measured in the microbalance. We have refined certain areas of its administration and scoring at the cost of increasing its complexity and time consumption. We have perhaps extended its areas of utilization but hardly enough to justify the expended effort. Generally speaking at this point, the method remains essentially unchanged, streamlined perhaps in appearance, but basically still an excellent tool—but that only in the armamentarium of the psychiatrist who truly faces clinical reality.

There is, if we incline toward this view, a most pressing burden on our conscience. Those of us who have advanced and promulgated the Rorschach technique must be acutely aware of the seizure of its control by poorly trained clinical workers. Certainly it is our problem and ethical duty to attempt to limit the activity of the pseudoclinician who will promise all for a fee. We have in the past trained him—we have permitted his phony writings to be published—we have (and I feel guilty in all these respects) permitted the untrained psychologist and psychiatrist to fulfill, by use of this technique, his thwarted drive to function as a genuine clinician. I do not include here certain well-trained clinical psychologists and psychiatrists with whom I have worked the last 10 years, but I do indite the average current graduate who without training or experience would practice diagnostic and therapeutic mental medicine. If we permit this usurpation of our skills, we must accept such statements as appeared in a recent publication—"the police chiefs were all required to take the Rorschach Test—naturally, they all failed." Such verbalistic droppings, commonplace in the literature, reflect our failure to delineate by accurate research the limitations of this psychiatric technique.

The same holds true of the great group of other projective methods. Here, however, if possible, we are worse off. Aside from the T.A.T., for which I have much respect, we are in a no-man's land where everybody has a method and no man will accept ought but his own. We can draw trees and houses and persons, we can put mosaics together, we can fill in blurbs of cartoons, or make a picture of the world, or stare at ancient photographs of peculiar people long-dead, or most anything else!! Many of these methods are probably quite worth while. The authors

of the better techniques—or maybe the better authors—do not tend to claim the impossible at least in published papers. Obviously, an aggressive scientific approach—testing, checking, weighing each step—is essential to evaluate these behavior bonanzas. We must not dwell upon the trivial—missing the gold and treasuring the tin. Certainly the application of the methodologies of modern clinical medicine can function here, as elsewhere. It is high time that we recognize these projective methods and the place of these techniques in mental medicine. If we do not, we then should resign ourselves to a passive acceptance of the now present pseudoscientific promulgations of our poorly trained, but more ambitious competitors.

This problem has almost escaped us in our lethargy. Let us hope we can return to adequate psychiatric control these important psychiatric techniques; or if this be impossible, perhaps as medical scientists we can learn to evaluate the results of the reports of the method in terms of the skills of the person making use of it, rather than by praising or condemning the technique itself as though we considered it a nonfallible mechanistic process.

BIBLIOGRAPHY

1. Rorschach, Herman. Psychodiagnostics (English translation). Hans Huber, Berne, Switzerland, 1942.

2. Lindner, Robert M., and Seliger, Robert V. Projective techniques and the medical psychologist. South. Med. & Surg., **107**: 355, Nov. 1945.

3. Epstein, H. L., and Schwartz, A. Psychodiagnostic testing in group work. Rorschach Research Exchange, **XI**: 23, 1947.

4. Johnson, C. E., and Sherman, J. E. Clinical significance of the Rorschach test. Am. J. Psychiat., **104**: 730, May 1948.

5. Young, R. J. The value of the Rorschach test in differential diagnosis. Am. J. Psychiat, **105**: 381, Nov. 1948.

LYMPHOCYTIC AND EOSINOPHILIC REACTION TO ELECTRIC SHOCK TREATMENT[1]

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This work is based on the theory that electric shock stimulation is a factor of severe short stress for a patient and calls forth his defense reactions. It has been stated by numerous investigators that the blood count shows characteristic changes during the alarm reaction consisting of a pronounced leukocytosis due to the increase in neutrophilic leukocytes with relative lymphopenia.

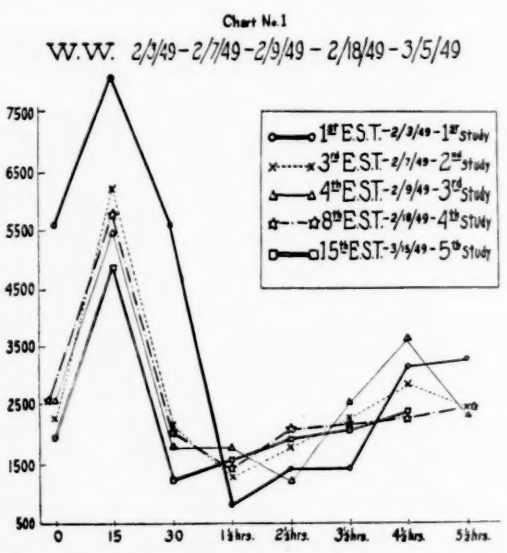

FIG. 1.—W. W., male, 27-year-old schizophrenic. Improved. Discharged.

It was said by Selye(1) that changes are particularly obvious in the countershock phase and are preceded by leukopenia if the damage is severe. Dalton and Selye(2) expressed the opinion that leukocytosis preceded by a decrease and followed by an increase of eosinophiles seems to be a constant feature of the alarm reaction. As electric shock treatment is undoubtedly a very drastic, alarming stimulus and the hematologic changes may be expected to be pronounced, we decided to study the blood counts in regard to the lymphocytic response of a group of unselected patients at regular intervals following the treatment for several hours. Later another group was added in which both the eosinophilic and lymphocytic counts were studied.

METHOD

The first group consisted of 15 patients taken in the order in which they came to the shock room. It consisted of 3 men and

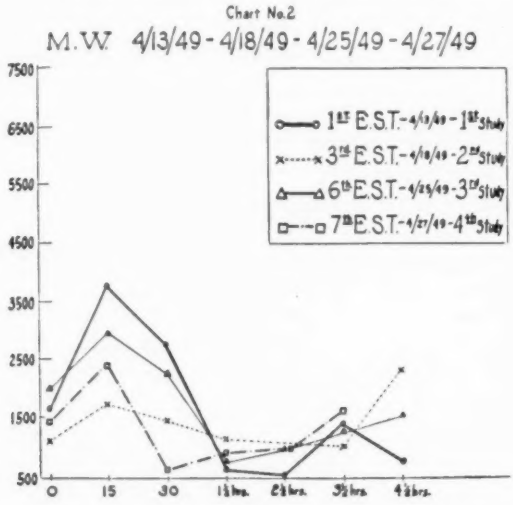

FIG. 2.—M. W., female, 31-year-old schizophrenic. Mild improvement.

12 women, aged 22 to 57. Diagnoses included 8 cases of schizophrenia, one case of manic-depressive psychosis, depressed type, 4 cases of involutional psychosis, one case of psychosis with hyperthyroidism, and one case of psychosis with trichinosis. The second group consisted of 8 patients, 4 men and 4 women aged 38 to 59. Diagnoses included 3 cases of manic-depressive psychosis, depressed type, one case of involutional melancholia, one case of paranoid condition, one of psychoneurosis with pernicious anemia, and one of schizophrenia. The counts were done at intervals of 15 minutes, 30 minutes, 1½, 2½, 3½, 4½, 5½ hours, etc., after the electric shock treatment (EST), until the upward trend of the blood count was obvious (see Figs. 1-4). Two patients,

[1] From the Pathological Laboratory of the Boston State Hospital.

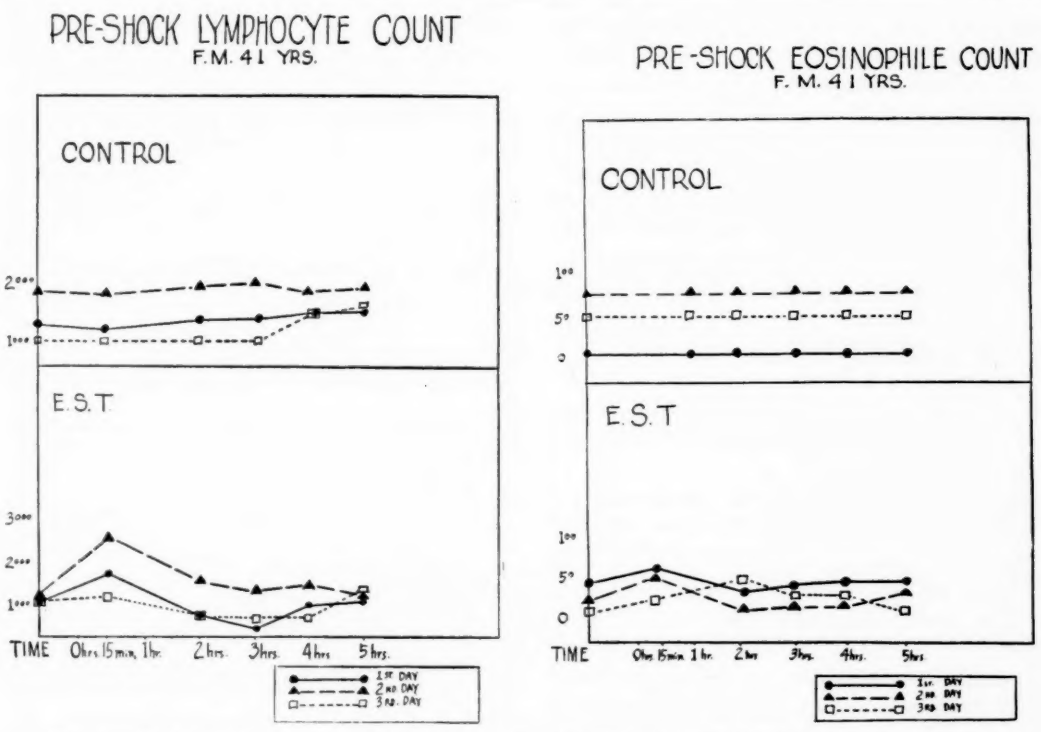

FIG. 3.—F. M., male, 41-year-old schizophrenic. Unimproved. The chart shows pre EST and post EST counts. The post EST pattern differs from the pre EST control pattern.

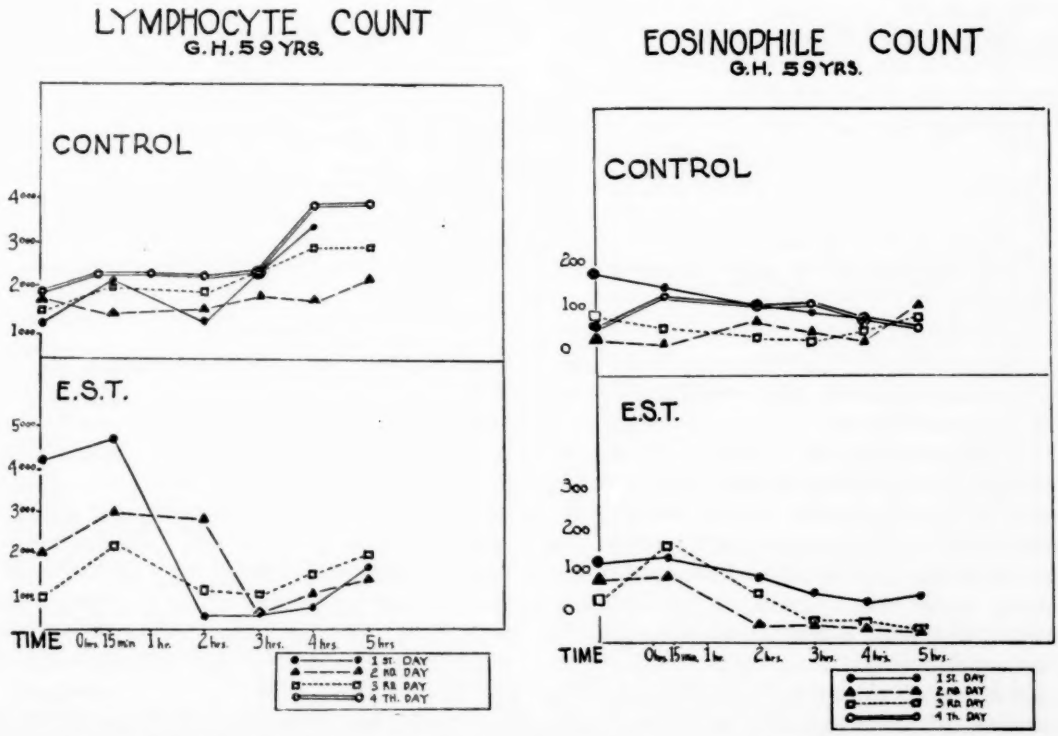

FIG. 4.—G. H., female, 57-year-old manic-depressive. Unimproved. The chart shows the pre EST and post EST counts in an excitable patient. The post EST pattern is typical.

one male and one female, had preliminary control counts for 3 days preceding the EST. The initial eosinophilic count in both was much lower than the average of 180-300 mentioned by different workers. The lymphocytic count showed only mild variations in the male patient, who was placid, and slightly more pronounced changes in the female patient, who was greatly excited. The eosinophilic count curve was flat in the male patient and showed mild variations in the female (see Fig. 5).

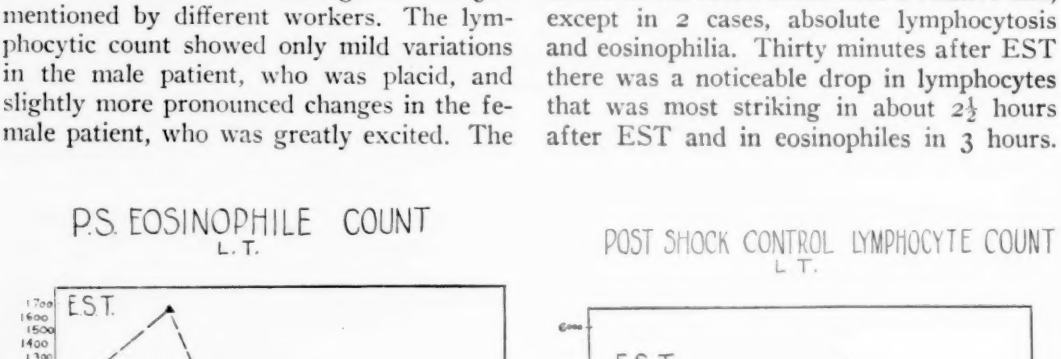

FIG. 5.—L. T., male, 53-year-old manic suffering from a chronic deforming arthritis. This chart shows the difference between the counts following EST and the counts taken 10 weeks after the treatment. Great improvement.

It was noticed that 7 out of 8 patients started with a low eosinophilic count running from 30.6 to 105.56, the average being 53.81. The only exception was a manic patient who had a chronic deforming arthritis and whose initial count was 552.02. After 3 treatments he quieted down considerably and his eosinophilic count went down to the level of the rest of the group (see Fig. 5). Regardless of the age, sex, diagnosis, or the number of previous treatments (in one case the study began when the patient had his 86th EST), the response was similar in all cases: within 15 minutes there was an increase in the blood count with a relative and, except in 2 cases, absolute lymphocytosis and eosinophilia. Thirty minutes after EST there was a noticeable drop in lymphocytes that was most striking in about 2½ hours after EST and in eosinophiles in 3 hours. Each patient had his own pattern, which was repeated with minor variations after each treatment, but the main feature of the response was the same—leukocytosis and eosinophilia 15 minutes after the EST, dropping down to lymphopenia and eosinopenia in from 1½ to 3 hours after the treatment (see Figs. 1-5). In most of the cases where first study was done following the first EST, the first curve showed a little wider range, a higher leucocytosis, and a higher lymphocytosis than in subsequent studies. This also has been reported by Michael.

DISCUSSION

According to Cannon(3) "in times of great perturbation" there is an increased outpouring of adrenaline (epinephrine). This adrenaline secreted in times of stress has the same effect as the injected adrenaline; therefore, it causes liberation of sugar from the liver glycogen into the blood stream. We know that EST is followed by an increase of blood sugar in the patients(4, 5), that the influence of electrically induced convulsions on the blood sugar levels in rats is abolished by adrenalectomy and increased by vagotomy, that injections of epinephrine produce a marked lymphocytosis followed by lymphopenia as a result of adrenocortical activity(6). We have observed the immediate retraction of the nictating membrane in etherized cats subjected to EST. These etherized cats had a complete relaxation of the nictating membrane, which retracted immediately on the application of EST (one of the author's own observations)(7). According to Rosenblueth (8) this reflex response is a very sensitive indicator, as it reacts to a slight increase of adrenaline in blood.

It seems that the rapid, short-lasting lymphocytosis following EST (released probably by the spleen) and increased blood sugar are due to the effect of increased adrenaline. Whether epinephrine-increased blood sugar is a stress causing lymphopenia(9), or whether epinephrine itself produces lymphocytosis followed by a compensatory depression of lymphocytes, as quoted by Pincus(10), or whether through the stimulation of the pituitary gland the adrenal cortex produces more of the "S" hormone, which depresses the lymphocytes and eosinophiles, or whether all 3 factors combine, it seems that the response initiated by adrenaline in the moment of stress leads to lymphopenia and eosinopenia within 3 hours after EST. The same type of blood changes following EST have been described by others (11, 12). Hill, Forsham, and Finch(13) injected ACTH (adrenocorticotropic hormone) in a single intramuscular dose of 25 mg. into normal human subjects with unimpaired adrenal function and obtained an increase in circulating neutrophiles and a decrease in circulating lymphocytes and eosinophiles in 3 to 4 hours—a pattern similar to one we have in patients after EST. Roche, Thorn, and Hills(14) found postsurgical eosinopenia, which they interpreted as an evidence of increased adrenocortical activity, and normal or high postoperative eosinophile level, which suggested adrenocortical insufficiency. Their conclusions were borne out by the difference in patients' postoperative course in these 2 groups. Laragh and Almy (15) found eosinopenia following epinephrine, insulin, and surgical operations. It seems that lymphocytopenia and eosinopenia represent a nonspecific reaction to stress whether evoked by EST, surgery, injection of ephedrine, or administration of ACTH. Pincus administered injections of 25 mg. of ACTH to 36 healthy normal men and 34 schizophrenics and found that roughly one patient in 5 had normal adrenocortical responses, but when large doses (75-100 mg.) of ACTH were given, the lymphocytic and eosinophilic responses were elicited in schizophrenics who failed to respond to 25 mg., *i.e.*, schizophrenics need larger amounts of ACTH for the same response reaction. Electric shock stimulation has produced lymphocytic and eosinophilic responses in all our patients comparable to large doses of ACTH. Pincus(16) emphasizes the difference in reaction of schizophrenics and normal subjects to ACTH, which he interprets as the lack of activation of endogenous adrenocortical secretion in schizophrenics owing to the defective response of adrenal cortex. He appropriately calls it "a species of hypoadrenalism." Nevertheless, it seems that even in schizophrenics the lymphocytopenia and eosinopenia-inducing secretion is the least disturbed. The glucose tolerance test in the same group of patients indicated that lymphocytopenia occurred in a fair number of patients. The adrenal-cortical production is very complex; a dissociation of hormonal production of adrenal glands, a lower production of some, and a fairly adequate production of others seems possible.

It is not unreasonable to suspect that in this type of hypoadrenalism the "sugar" hormone rises to the defense of the organism in stress while others lag, and effects eosinopenia and lymphocytopenia. The question

of the route by which the stimulation can reach the pituitary gland in the situation of stress has not been answered yet. In electric shock treatment, where the electric current passes close to the hypothalamus and the third ventricle, it is possible that the waves of stimulation reach down to the pituitary through the infundibulum stimulating the hypothalamus as well as the pituitary gland. We know that some types of patients respond to EST with improvement and even cure, while others show a fleeting improvement if at all. Of 23 patients under study, 6 patients of the first group improved enough to go home on visit, 9 remained unimproved. Of the second group, 2 improved enough to go on visit, one (manic-depressive, manic) quieted down, and 5 remained unimproved, yet the reaction to treatment as far as lymphocytic and eosinophilic counts are concerned was of the same pattern. That makes us consider another aspect of lymphocytic dissolution. White and Dougherty(17) found a rise in serum proteins in rats 3 and 6 hours after the administration of adrenocorticotropic hormone. Lymphopenia developed within 1 to 3 hours and returned to normal in about 24 hours. Desoxicorticosterone ("salt") hormone did not produce similar changes. These authors found that pituitary-adrenal hormone controls the release of antibodies from the lymphocytes and that the rate of protein release from lymphocytes under normal physiological control of the pituitary adrenocorticotropic hormone is by way of adrenal cortex. They presented evidence that lymphocytes and lymphoid tissue may be the source of gamma globulin and play a rôle in antibody formation and that antibody titers may be increased by administration of adrenal-cortical hormone. The increase in plasma gamma globulins and antibody titers from lymphocyte dissolution directly or through adrenal agency in some animals seems to be established. In this relation it may be worth while to mention the work of Lewis and Page(18, 19) who found that administration of adrenal extracts, natural and synthetic, protected adrenalectomised rats against the toxic effects of typhoid and diphtheria, and that gamma globulin level of the extract-treated group of animals was somewhat higher than that of the saline-treated group. The blood counts in these animals showed the fall in the lymphocyte count 2 hours after the toxin administration. The suggestion is offered that there may be an immunological reaction due to an increased antibody production as a result of lymphocytic dissolution following the EST.

CONCLUSIONS

1. A study of lymphocytic and eosinophilic reaction to EST in 23 psychotic patients is presented with a proof that this is a non-specific reaction to stress.

2. An idea is expressed that lymphocytes contribute to the increase of the immunological reaction of the patient to the potential danger of stress.

BIBLIOGRAPHY

1. Selye, H. The general adaptation syndrome and the diseases of adaptation. J. Clin. Endocrinol., **6**: 117, 1946.

2. Dalton, A. J., and Selye, H. The blood picture during the alarm reaction. Folia Hæmatologica, **62**: 397, 1939.

3. Cannon, W. B. Bodily Changes in Pain, Hunger, Fear and Rage. D. Appleton and Co., New York, 1929.

4. Parsons, E. H., et al. Comparative lymphocytic and biochemical responses of patients with schizophrenia and affective disorders to electric shock, insulin shock, and epinephrine. Am. J. Psychiat., **105**: 573, Feb. 1949.

5. Stern, K., et al. The influence of electroconvulsive treatment on blood sugar, total number of leucocytes and lymphocytes. Am. J. Psychiat., **105**: 585, Feb. 1949.

6. Gellhorn, E., and Kessler, M. The effect of electrically induced convulsions on vago-insulin and sympathetico-adrenal system.

7. Raskin, N. Unpublished data.

8. Rosenblueth, A., and Schwartz, H. G. Reflex responses of nictating membrane. Am. J. Physiol., **112**: 422, July 1935.

9. Pincus, G., and Hoagland, H. Adrenal cortical responses to stress in normal men and in those with personality disorders. Am. J. Psychiat., **106**: 641, March, 1950.

10. Idem.

11. Altschule, M. D., et al. Decreases in blood eosinophilic leucocytes after electrically induced convulsions in man. J. Clin. Endocrinol., **9**: 440, May 1949.

12. Mikkelsen, W. P., and Hutchens, T. T. Lymphopenia following electrically induced convulsions in male psychotic patients. Endocrinol., **42**: 394, May 1948.

13. Hills, A. G., et al. Changes in circulating

leucocytes induced by the administration of pituitary adrenocorticotropic hormone (ACTH) in man. Blood, 3:755, 1948.

14. Roche, M., et al. The levels of circulating eosinophils and their response to ACTH in surgery. New Eng. J. Med., **242**:307, March 1950.

15. Laragh, J. H., and Almy, T. P. Changes in circulating eosinophiles in man following epinephrine, insulin and surgical operations. Proc. Soc. Exper. Biol. and Med., **69**:499, 1948.

16. Pincus, G., et al. A study of pituitary-adrenocortical function in normal and psychotic men. Psychosom. Med., **11**:74, 1949.

17. White, A., and Dougherty, T. F. Influence of pituitary-adrenotropic hormone on lymphoid tissue structure in relation to serum proteins. Proc. Soc. Exper. Biol. and Med., **56**:26, 1944.

18. Lewis, A. L., and Page, I. H. Method of assaying steroids and adrenal extracts for protective action against toxic material (typhoid vaccine). J. Lab. Clin. Med., **31**:1325, 1946.

19. Lewis, A. L., and Page, I. H. Studies on the protective powers of the adrenal extract and steroid against bacterial toxin in adrenalectomized rats. Annals of the New York Academy of Sciences, Volume 50, The Adrenal Cortex, June 27, 1949.

INDIVIDUAL REACTIONS TO COMMUNITY DISASTER [1]

The Natural History of Psychiatric Phenomena

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There is an extensive psychiatric literature on individual behavior under stress, this having been greatly augmented during the last war. It is possible to consider the content of this material along 3 main axes:

1. Reactions: the psychological states associated with the stress situation.

2. Factors: the various kinds of circumstance said to contribute to the reactions observed.

3. Psychodynamics: character and mode of operation of the alleged relationships between the normal or abnormal reactions observed and the factors contributing to them.

Many types of *reaction* have been described.[2] They range alphabetically from anxiety and apathy, through exhaustion panic and psychosomatic reactions, to suicide and traumatic and war neuroses. The *factors* have also been described from various points of view. They range from manipulative activity, apprehension, anticipation, through fatigue, group identification, helplessness, to leadership, noise, and training.

Again, there are a number of theories concerning the *psychodynamics* of the individual phenomena. Adler(1) has contributed a lucid development of the concept of "fear" and "conflict neuroses" in reaction to acute stress as put forward by Symonds(20). Fairbairn(6) has emphasized overdependence upon home and family surroundings and Lidz(12) stressed the relationship of a background of broken or distorted homes to the Guadalcanal casualties. Gillespie(8) has discussed the rôle of conditioning, and Goldstein(9) has presented his conception of a psychological state of "catastrophe" following acute stress. The rôle of latent homosexual trends has been outlined by Kris(11) and by Schmideberg(17). Kardiner(10) has discussed his view of the psychodynamics in terms of "ego contractions," and an inhibition of techniques for environmental mastery as a consequence of overwhelming stress. Importance has been attributed to the operation of repressed aggressive impulses by Stengel(18), by Rickman(15), and by Burgum(2) in her discussion of the relationship between fear of explosion and aggression. The question of "mental breaking points" has been discussed by Dynes(5). Roberts(16) relates the symptoms of a number of cases of battle anxiety to the unconscious presence of the death instinct. Rickman(15) has outlined the changes in theory between the 2 wars with the shift from emphasis upon conflict of instincts to emphasis upon the "kind of emotional bond existing in the patient's mind to objects (people) in whom he is interested." The conflict is seen "not . . . in abstract terms of instinct but in terms of concrete object relationships." General reviews of the various theories have been made by Maskin(12), Miller(13), Gillespie(7), Dunn(4), and others.

In addition to these 3 axes as described, reactions, factors, and psychodynamics, it has appeared necessary to add a fourth of some importance. This is the "natural history" of the process during which these reactions are observed and during which the alleged factors are operating. A description of this natural history with respect to psychiatric phenomena in acute community disasters, and a discussion of its relevance for this and other psychiatric research, is the purpose of this paper.

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From the Department of Psychiatry, McGill University; and The Defence Research Board, Ottawa.

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Thanks are due particularly to Dr. N. W. Morton, who discussed all phases of the work with the author.

[2] The following is not intended to constitute any review of the literature. Various examples are cited only to illustrate the basis for a division of the material along the axes described. Specific references are quoted in discussing the psychodynamics because of the close relationship between author and theory.

II

The research program upon which the following material is based has been in progress for over a year and is divided into 5 overlapping phases:

1. Review of the literature.
2. Field survey.
3. Experimental investigation, which is set up for the purpose of studying hypotheses, gained from the first 2 phases, in an experimental setting with individuals and groups, and is intended to contribute toward increased definition of the findings.
4. Interview-schedule and questionnaire. The purpose of this phase is to determine what Canadians of various economic, social, and occupational classes *think* they would do and why, in various situations of community disaster and personal stress. Such material may reveal significant correlations or discrepancies—between "ideal themes," phantasies or beliefs, and actual behavior—which would increase our understanding of the fundamental dynamics involved in responses to disaster.
5. Conclusion—thought of not only as a set of recommendations or conclusions, but also as leading to further significant questions for research.

Field survey is the current main emphasis, and has furnished the material from which the data for this paper have been obtained. It consists of on-the-spot observations by a mobile team of psychiatrist and sociologist. This team undertakes immediate study of community disasters wherever they have occurred in Canada, following notification by a system of informants across the country. Clinical psychiatric interviewing, lasting on the average 2 hours, apart from follow-up study, is the method used in field investigation of the individuals involved—survivors and others. The description that follows next is based upon field survey in 4 disasters —2 large fires involving apartment-house areas in towns of quite different social structure, a marine fire (the S.S. Noronic), and a flash flood.

III

In the pattern of individual reactions[3] to an acute disaster, at least 3 overlapping phases can be distinguished: (a) a period of impact, (b) a period of recoil, and (c) a posttraumatic period. Each of the 3 periods may be characterized according to stress; time—duration and perspective; and psychological phenomena.

Stress.—(a) The first period is characterized by the impact of initial stresses and continues until these stresses are no longer operating upon the individual or group. It is the period of maximal and direct effect of initial stresses. (b) The period of recoil is characterized by a suspension of initial stresses, and thus begins when the individual has succeeded in avoiding their direct effect for the moment at least, by one manœuver or another, such as escape. Some stresses may continue during this period (*e.g.*, cold, injuries incurred during the first period, etc.) but from a psychological point of view, and relatively in terms of intensity and type, the stresses are suspended during this period.[4] (c) The stresses of the posttraumatic period are derivatives of those of the initial period of impact and are more obviously "social" in nature. This is the period during which first full awareness is possible of what the disaster has "meant" in terms of loss of home, belongings, financial security, and particularly of bereavements. It begins after the security from initial stresses has been first fully established, and when the individual comes to face, once again, the matter of daily living but in an environment altered in one or several crucial aspects.

Time.—First with regard to *duration,* (a) that of the period of impact may vary within fairly wide margins. However, for the acute catastrophe it may last for only 3 to 5 minutes, to 1 hour. The period of impact in the case of the marine fire was about 3 to 6 minutes; in the case of the flood, about ½ to 1½ hours. (b) The time duration of the period of recoil also varies, but to a

[3] Group phenomena are not considered primarily here, although their investigation is an integral part of the research. Some aspects of these have already been reported (21).

[4] Further stresses may be of such a type and severity as to impose a prolongation of the first period of impact; or put in another way, as to produce a second impact immediately following the first, and thereby postponing the period of recoil for varying periods of time. In this discussion, however, the progression following an *acute* stress is described, and the progression in the event of prolonged or repeated stresses will be taken up at another time.

smaller extent apart from abnormal reactions, being determined more by individual differences than by the nature of the stresses. (c) The posttraumatic period lasts, hypothetically at least, for the remainder of the person's life, and includes the period of rehabilitation.

Second with regard to *perspective*, it appears that there are differences from one period to another which raise some interesting and possibly important questions. These differences in time perspective go hand in hand with the way in which stresses become apparent to the individual. (a) The time perspective of the period of impact concerns the immediate present, responded to automatically. (b) That of the period of recoil concerns the immediate past, responded to by the first overt emotional expression. (c) The time perspective of the posttraumatic period concerns the past, the present, and the future. A consideration of this concept raises further questions—*e.g.*, Is there any difference in the time perspective between those who show "appropriate" responses to the stresses and those who respond inappropriately or abnormally? Is there any difference in this regard between the "predisposed" and those "not predisposed" and are any certain habitual time perspectives identifiable in the "predisposed"? What are the factors involved in the determination of time perspective? Has the knowledge of such factors any application for the management of an acute stress situation?

Psychological Phenomena.—The following is a summary of the main trends observed. (a) During the period of impact, reactions separate into 3 main groups. One group, of about 12-25%, are what might be described as "cool and collected" during the acute situation. They are able to retain their awareness, make an "appreciation" of the situation, formulate some plan of action, and carry it through. A second group, representing what might be called the "normal" reaction to the period of impact and making up about ¾ of the survivors, are stunned and bewildered. They show certain characteristics during this period: a definite restriction of the field of attention; lack of awareness of any subjective feeling or emotion although manifesting the physiological concomitants of fear; and automatic or reflex behavior. The last group, of about 10-25%, show manifestly inappropriate responses—states of confusion, paralysing anxiety, inability to move out of bed, "hysterical" crying or screaming, and so on.[5] (b) During the period of recoil, the majority of survivors are seeking shelter, sitting in or pacing about hotel lobbies, moving into the homes of friends or relatives, driving in taxicabs or ambulances, obtaining temporary shelter and care, or giving an account of their experiences for the first time. During this period there is a gradual return of self-consciousness and awareness for the immediate past. Subsequent recall is more complete for this period, but still not absolutely so. It is the period during which, for the majority, the first overt emotional expression occurs, and during which they first experience a subjective awareness of feeling or emotion—anxiety, fear, anger. Women may have typical alternate periods of crying and laughing, with some disturbed overt behavior. While being driven away from the disaster, they may have a "good cry." These reactions have been described before in part and it appears that this is the period in which they occur. During the period of recoil, the majority of survivors achieve their first awareness of what they have just passed through—and the disaster first achieves this limited perspective. One man, who had behaved adequately during the period of impact, dragging his unconscious wife along a smoke-filled hallway and down several flights of narrow, smoke-filled stairways, was unable to describe any feelings, to give any account of what he had seen or done, or how he came to do what he did. Going into a hotel lobby, he at first appeared calm though uncommunicative, unresponsive, and preoccupied. He went to use the phone to call some friends and found himself unable to talk,

[5] The psychological phenomena of this period as described have an important bearing upon other developments, both during this period and subsequently. These include the evolution of hostility and its attendant scapegoating, the dynamics of initiative and leadership, the dynamics of guilt as may develop subsequently, and the function of group dynamics with respect to the individual. Because of limitations of space, these considerations have been omitted from this outline. Some have been taken up elsewhere(21).

experiencing an acute surge of subjective anxiety. He burst into tears, cried for several minutes, then said he felt better, showing a good deal of trembling and a need to talk of his experience. This is typical, although subjects may not burst into tears, and there is a need to talk or "ventilate" during this period, to get angry at someone or to express themselves in some way. The need to ventilate is associated with childlike attitude of *dependency,* which is an essential ingredient of the phase. Dependency may be precipitated in previously uncommunicative and unresponsive survivors by any genuine act of reassurance or aid on the part of people dealing with them. They want to be given something—coffee or a blanket—or to be looked after, and the importance of the giving and nursing appears not so much related to the actual kind of aid as to the psychological meaning of being cared for. When one talks to survivors some time afterwards, they describe these attitudes with some amusement, at the same time stressing the real and compulsive character of their needs during the earlier phase. In most, the period of dependency is transitory and even a day or 2 later the survivor may be quite unwilling to talk as freely as he had earlier. His manner is again fairly independent and he may be quite unwilling to accept help even though he needs it badly.

These attitudes of childlike dependency during the period of recoil are associated also with a *need to be with others* and a disinclination to be left alone. Although group formation is an important feature of individual responses to disaster, group characteristics are quite different during the various periods. During the period of recoil, the group behavior is based upon the needs of the survivors to seek out other people, and yet at the same time is characterized by the instability of the groups so formed among the survivors. There is a definite desire and need to be with others, and to achieve a stable, supporting interpersonal environment. The initiative for this, however, must come from persons other than the survivors who, though needing others, need them purely for themselves. Their social behavior amongst themselves at this time resembles that of very young children during the phase of play in shifting groups.

This is only a brief outline, but the present impression is that the period of recoil represents a most important part of this process of response to disaster. Both the character of individual responses during this period and their management by personnel engaged in rescue and relief would appear to have a crucial significance for subsequent psychological events. The emphasis in this outline has been upon the general characteristics of the period rather than upon individual difference, or upon the various seemingly pathological deviations that have also been observed.

(c) The reactions of the posttraumatic period are closer to those phenomena with which psychiatrists are familiar and which are described in the literature as posttraumatic reactions. They include temporary anxiety and fatigue states, psychotic episodes, recurrent catastrophic dreaming, depressive reactions, etc. The more severe and prolonged reactions that are included in the general terms "traumatic syndrome" or "posttraumatic neuroses" become apparent during this period. Full presentation of these data must await completion of follow-up investigation.

IV

The description of the natural history, as has just been outlined for the individual in disaster, is felt to be a desirable step in psychiatric investigation, and in accordance with the nature of psychiatric subject matter, which consists of essentially interdependent phenomena arranged in continuous process.[6]

A study of psychiatric phenomena along the 3 axes mentioned at the beginning of this paper—reactions, factors, and psychodynamics—is insufficient, although furnishing necessary data. Without a knowledge of preceding stages, and of the position in the process, of the stage under study, the reactions and factors observed at any moment cannot be brought into proper perspective.

Psychiatric phenomena observed at any

[6] In this context, the term "cause" refers to the regular association of the events under study with other antecedent phenomena in the process.

given moment represent a cross section taken through a process. For an understanding of the significance of phenomena observed at this moment, further knowledge is necessary of the position in the process of the point under study, and of the properties of preceding and succeeding phases. For this the delineation of the natural history is required and therefore this would appear desirable as a first step in research method.

This point of view is an implicit ingredient of the clinical method, and the arrangement of data in chronological sequence has been mentioned in relationship to clinical method by Cruikshank(3). The intention here is to make this methodological approach explicit for psychiatric investigation, to point out its relationship to other types of psychiatric data, and to undertake a preliminary development of its application in a concrete piece of research.

Returning to the clinical discussion of the 3 periods as already described, we can test the relevance of the hypothesis that this method has derived, by asking a number of questions:

Is it useful for field work, in organizing the observations? It allows us for the first time to see the various reactions as part of a natural process that can be investigated further with reference to its several stages. It permits us to organize the apparently amorphous material into a coherent picture.

Does it allow us to predict? It is possible to predict, for relief personnel for example, what the various stages of reaction will be, what to expect, and what criteria should be used for the identification of someone at any one of the various stages. One can predict what reactions should be expected at various periods during and following the disaster. This prediction can greatly increase the sensitivity and psychiatric value of relief personnel by augmenting their personal security and their understanding of the survivor. With further investigation, we hope to fill in the details of these predictions with greater accuracy and in greater depth.

Does it allow us to ask further significant questions or frame useful hypotheses? We can ask what will occur psychologically if the period of impact is greatly prolonged. Is there any "critical" aspect to the duration of the period of impact? Has the duration, or intensity, of the period of impact any relationship to the reactions during the period of recoil or to recovery during the posttraumatic period? Is a period of recoil necessary in any sense? What are the psychodynamics of the period of recoil, what are the meanings of the various psychological phenomena as observed, and what is the relationship of such psychodynamics and such meaning to psychiatric reactions during the posttraumatic period? What is the rôle of various symbolic meanings that stresses may have in determining reactions during the period of impact or in later stages? How long can the period of impact be before a period of recoil becomes essential? Does a greatly prolonged period of impact affect the possibility of a period of recoil? To what extent are predisposition, training, anticipation, or time perspective important to the kind of feelings and attitudes that appear in the various periods? One could continue to ask many further questions, some of them possibly fruitful. The application of this methodological tool has allowed us to focus attention upon the dynamics of the process itself, without, at the same time, excluding other data that are relevant. In fact, the significance of, and perspective upon, other data appears to be enhanced by the approach.

Does the hypothesis allow us to frame hypotheses that may be carried through to experimental situations? Some of the above questions and others that have developed from this with respect to leadership, evolution of hostility, and group activities, for example, can be set up in operational terms for work with individuals and small groups in an experimental setting.

Finally, it is not felt that these periods are separate "things" or "entities." The hypothesis represents only a useful way of conceptualizing the data in terms of a process that can be more easily investigated and around which further hypotheses can be arranged. It is only one way of organizing the data—it is a fiction—and is useful only to the extent that it allows one to organize the data meaningfully, to predict how people feel and behave, and to assist us in treating them by an increased insight into the process

they are passing through. It is not expected to remain in its present form—including the terminology—but furnishes a starting point for further work and some conception with which we can disagree.

SUMMARY

1. Psychiatric phenomena with respect to individual behavior under stress can be considered to lie along 4 main axes—the *natural history* of the process, *reactions* and *factors* at various stages of the process, and the *psychodynamics* of the interrelationships between reactions and factors in the continuum.

2. The natural history of individual behavior in acute community disasters that have been studied has been briefly described. This appears to fall into 3 overlapping phases—a period of impact, a period of recoil, and a posttraumatic period—each of which can be characterized according to stress, time, and psychological phenomena.

3. The relevance of the natural history method for this particular investigation and for psychiatric research in general has been briefly discussed.

BIBLIOGRAPHY

1. Adler, A. Two different types of posttraumatic neurosis. Am. J. Psychiat., **102**: 237, Sept. 1945.

2. Burgum, M. Fear of explosion. Am. J. Orthopsychiat., **14**: 349, April 1944.

3. Cruikshank, W. D. The scientific method in clinical medicine. Brit. M. J., **1**: 843, June 1, 1946.

4. Dunn, W. H. War neuroses. Psychol. Bull., **38**: 497, 1941.

5. Dynes, J. B. Mental breaking points. New Eng. J. Med., **234**: 42, Jan. 1946.

6. Fairbairn, W. R. D. The war neuroses: Their nature and significance. Brit. M. J., **1**: 183, Feb. 13, 1943.

7. Gillespie, R. D. Psychological Effects of War on Citizens and Soldiers. New York, Norton, 1942.

8. Gillespie, R. D. War neuroses after psychological trauma. Brit. Med. J., **1**: 653, May 5, 1945.

9. Goldstein, Kurt. On so-called war neuroses. Psychosom. Med., **5**: 376, Oct. 1943.

10. Kardiner, Abram. The Traumatic Neuroses of War. Psychosom. Med. Monograph II-III. New York, Hoeber, 1941.

11. Kris, E. Danger and morale. Am. J. Orthopsychiat., **14**: 147, 1944.

12. Lidz, T. Casualties from Guadalcanal: Study of reactions to extreme stress. Psychiat., **9**: 193, Aug. 1946.

13. Maskin, M. Psychodynamic aspects of the war. A survey of the literature. Psychiat., **4**: 97, Feb. 1941.

14. Miller, E. Neuroses in War. New York, Macmillan, 1943.

15. Rickman, John. A case of hysteria: Theory and practice in the two wars. Lancet, **240**: 785, June 21, 1941.

16. Roberts, W. W. The death-instinct in morbid anxiety. J. R. Army Med. Cps., **81**: 61, 1943.

17. Schmideberg, M. Individual reactions to air-raids. Int. J. Psychoanal., **23**: 146, 1942.

18. Stengel, E. Air raid phobia. Brit. J. Med. Psychol., **20**: 135, 1944.

19. Strecker, E. A., and Appel, K. E. Psychiatry in Modern Warfare. New York, Macmillan 1945.

20. Symonds, C. P. Anxiety in combatants. Brit. Med. J., **2**: 703, 1943.

21. Tyhurst, J. S. A Psychiatric Study of Community Disaster. Presented at Section on Sociology and Psychiatry, Meeting of American Sociological Association, New York, December, 1949.

PSYCHIATRIC FACILITIES IN CINCINNATI

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Preparatory to the meeting of the American Psychiatric Association in Cincinnati in 1940, Dr. Emerson A. North wrote a comprehensive report on the psychiatric facilities in Cincinnati and Ohio. In this report,[1] Dr. North discussed in detail the origin and development of the various hospitals, institutions, clinics and agencies, both public and private, concerned with the problems of mental health.

In the decade that has elapsed since that report was written, there has been a tremendous upsurge of interest in psychiatry in all civilized countries. Cincinnati has not been laggard in this respect. It has not only expanded its teaching and treatment facilities but it has incorporated in its philosophy the newer concepts that have been introduced into psychiatric thought. This is nicely exemplified in the present setup of the department of Psychiatry of the Medical College of the University of Cincinnati, of which Dr. Maurice Levine has been the director since 1947.

Over the years, the department has developed certain specific characteristics that are of general interest. One is that it embodies a workable integration of a number of participating institutions and groups. It is a division of the College of Medicine of the municipal University of Cincinnati; a large part of its outpatient work is organized as the Central Clinic of the Community Chest; its wards are a division of the municipal General Hospital, and the hospital houses the Central Clinic outpatient service. Most of the activities of the department can be visualized in terms of the integration of these 3 major responsible groups, the Medical School, the General Hospital, and the Community Chest. Further, one of its activities, the Child Guidance Home, is a joint project of the Medical School, the Community Chest, and the Jewish Hospital, and is housed in a homelike building on the grounds of the Jewish Hospital. Another of its subdivisions, industrial psychiatry, is a joint project of the department of psychiatry and the Kettering Laboratory for Industrial Medicine. Still another is a joint activity of the departments of psychiatry and internal medicine, which together run a new psychosomatic ward and a new psychosomatic clinic. Finally, the division of pediatric psychiatry is a joint activity of the departments of pediatrics and psychiatry, with its director having an assistant professorship in each of the 2 departments.

Such a development of practical working integrations with related groups is one of the specific characteristics of this department of psychiatry. This fact has great significance in a number of ways, e.g., in bringing the psychiatrist-in-training in close contact with all the community aspects of psychiatry, with the social agencies and the courts, and with other fields of medical practice. From the point of view of the other groups this integration has value as well, e.g., in having the psychiatric consultation and treatment services provided for the social agencies as part of an intensive teaching program.

Since the last meeting of the American Psychiatric Association in Cincinnati, the budget of the department had quadrupled. The budget from the University sources has been increased, as has that from the Community Chest. Grants from the United States Public Health Service for the training of psychiatrists, from the Rockefeller Foundation for the general activities of the department, and from the Commonwealth Fund for the development of the interrelationship between internal medicine and psychiatry, have provided extensive help in the growth of the department.

Those who visited the department in 1940, and will visit it again in 1951, will not find any very considerable change in bricks and mortar. The 2-story psychiatric pavilion of 10 years ago is now a functioning 4-story building. The outpatient service of the department, which in total hours spent with patients and their relatives now ranks as the second largest in the country, is located in the surgical building basement, which was

[1] Am. J. Psychiat., 96: 1191, March 1940.

once used for storage purposes. In contrast are 2 other units that have been carefully planned and are very attractive. One is the new psychosomatic ward, in which some of the rooms are planned as living rooms with day beds instead of as the usual rather formal hospital bedrooms. The second is the Child Guidance Home, which was originally planned as an inpatient diagnostic center for children presenting behavior disorders and personality difficulties, under the direction of Dr. Louis A. Lurie.

The growth of the department since 1940 may be indicated by a few statistics. Instead of 2 full-time psychiatrists on the staff, there are now 9. Instead of 2 psychiatric social workers there are now 8, plus 6 field work students from the Smith School for Social Work. Instead of one full-time clinical psychologist, there are now 3, plus 2 psychology internes and a number of part-time graduate students in clinical psychology. Instead of 3 residents there now are 22 residents and fellows. The psychiatric wards have now an annual admission rate of 1,200 patients and the outpatient service (Central Clinic, General Hospital psychiatric outpatient department, and psychosomatic clinic) now provides approximately 16,000 hours of interviews for patients and relatives.

The teaching of undergraduate medical students has been tripled, with courses in all 4 years of the curriculum. A good part of the teaching of the psychiatric aspects of medical practice is done in other departments of the medical school either by the psychiatric staff or by competent members of other departments.

The program for the residents and fellows in training has undergone extensive expansion and revision. The essential change is the provision for close supervision of their work, of the sort provided in a psychoanalytic institute. Individual and group supervision and case seminars provide the core of the training program. The basic orientation is that of psychodynamics and psychotherapy, particularly with outpatients, but great care is taken to avoid having the resident trained only in one aspect of the general field of psychiatry. He is given extensive training in diagnostic work, ward management, and treatment of psychotic patients, both on the wards of the General Hospital and through a period of rotation through the nearby Longview State Hospital. Extensive work in neurology, neuropathology, electroencephalography, shock therapy, etc., also is provided. Experience in collaboration with the Probate Court, the Juvenile Court, and a large variety of social agencies is included. Teaching of medical students and nurses is emphasized as a part of the resident's training. Close contact with psychiatric social workers, clinical psychologists, and psychiatric nurses provides an indispensable experience. Many of the residents participate in research projects.

Another local characteristic is the degree to which the department of psychiatry has formed good working relationships with other medical services both in the General Hospital and in the Medical School. An active consultation and treatment service on the other wards is provided. The receiving and emergency ward of the hospital has a psychiatric resident in constant attendance. Collaboration with the departments of internal medicine, pediatrics, industrial medicine, neurology, and May Research Institute, is in the form of organized joint projects. Collaboration with the departments of dermatology, obstetrics, pharmacology, preventive medicine, and other divisions is extensive as well. As a result psychiatric orientation has been accepted by most of the other departments. The department of psychiatry has consistently laid emphasis on an adequate evaluation of physical findings, and other departments have discovered that an emphasis on psychodynamics does not preclude an adequate attention to neurologic and other somatic disorders. The fact that the department of psychiatry has the highest autopsy permission rate of all of the divisions of the General Hospital and the further fact that a number of patients referred to the psychiatric service as having essentially emotional problems were found by the psychiatric group to have predominantly somatic etiology have given a deep-going reassurance to the other departments about the adequacy of somatic studies and led to a fairly extensive acceptance of psychodynamics and psychotherapy as essential to all medical practice.

Because of limited space, a few of the other 10-year changes in the department of psychiatry can merely be listed:

The Child Guidance Home, formerly used largely for diagnostic studies, has been integrated with the department and now is a residential treatment center with a full-time staff.

A working affiliation with the United States Public Health Service Hospital in Lexington (for narcotic addiction problems) is in force, with the Lexington residents rotating through the Cincinnati service.

The department is also closely affiliated with the Chicago Institute for Psychoanalysis.

Longview State Hospital

The first institution for the care of mental patients in Ohio was built in Cincinnati under an Act of Legislation passed on January 22, 1821, entitled, "An Act establishing a Commercial Hospital and Lunatic Asylum for the State of Ohio." Credit for arousing the necessary interest in securing this legislation in all probability goes to Dr. Daniel Drake. To this legislation can be traced the beginnings of Longview Hospital, the main building of which was built in 1859 and was owned by Hamilton County until 1927, when the buildings and grounds of the adjacent Hamilton County Home were purchased by the State of Ohio along with those of Longview Hospital for the sum of $1,500,000.00 and the name changed to Longview State Hospital, which was designated to receive committed mental patients for the 4 southwestern counties of Ohio. Recent legislation has provided for a building program that will materially enlarge the present facilities.

Longview has an intensive program in the organic aspects of psychiatry, both diagnostic and therapeutic. Various forms of electric shock are used on a large scale. Classic electric shock with sine wave currents, brief stimulating current, electronarcosis, and some newer modifications of these are used regularly. Insulin is given in one of the longest established insulin clinics in this country. Fever treatment for paresis is carried out on a relatively large scale. Electroencephalography is an important part of the hospital program.

A children's unit was established in January 1950 and takes care of psychotic and severe behavior problem children, not manageable elsewhere. This is housed in a special building. Some of the aspects of this are very interesting, although the unit cannot be considered completely organized as yet. However, its services are being utilized by all sections of the state of Ohio. This marks a great step forward in the care of psychotic and severely emotionally disturbed children. Unfortunately, in most states, children committed to state institutions are housed in the same wards with the adults. The harmful effects of such an arrangement must be apparent to all. It is indeed a hopeful and encouraging sign to know that special children's units are being established in connection with state hospitals for the mentally ill. This is not only more humane for the child but gives a better opportunity for study and treatment.

The department of psychology of Longview State Hospital divides its work into 5 areas: diagnostic, therapeutic, vocational, rehabilitation, research and teaching.

Diagnostic studies are made of all patients on the receiving wards who are brought for presentation before the diagnostic staff. Not only standardized intelligence tests but also projective techniques are used.

The therapeutic services supplement other therapeutic techniques in the hospital. At present, group and individual work is carried on. The group work consists both of group discussions and psychodrama. Individual conferences with patients are used as needs are indicated in the group meetings. Test techniques applied at the beginning and end of a therapeutic course serve as objective measures of progress achieved with individuals and with the group as a whole.

The vocational rehabilitation program consists of 2 major approaches. The one is the placement of patients in jobs at the hospital; the other is job placement outside the institution. All placements are made after an assessment of the individuals' aptitudes and analyses of possible jobs. A first step in this new program is a job analysis of potential positions for patients at the hospital. Supervision of the patients after placement is an intrinsic part of the program.

Research is being conducted in a variety of areas.

Teaching is a regular function of the psychology department. The chief psychologist, who is a member of the graduate faculty of the University of Cincinnati, has teaching responsibilities with university students. The supervision of students in field work at Longview Hospital is shared by the senior members of the Longview psychology department. Teaching within the institution consists of series of sessions in the course for the affiliate nurses, and the course for the psychiatric aides. Teaching and miscellaneous groups of visiting classes from the psychology and sociology departments of the University of Cincinnati, Xavier University, Miami University, and Western College for Women have become a regular part of the department's program.

Private Facilities

The facilities for the care of private mental cases have also been expanded. The Good Samaritan Hospital and Christ Hospital have set aside wards for psychiatric patients. The plans of the new addition to the Jewish Hospital call for 2 entire floors to be devoted to the care of mental cases.

The Cincinnati Sanitarium, which is probably the oldest private hospital west of the Alleghanies specializing in the treatment of neuropsychiatric disturbances, has greatly enlarged its bed capacity and treatment facilities. The consultant staff, which also has been considerably enlarged, has become an integral functioning unit of the hospital. The standing of this institution is attested by the high rating it has received from the American College of Physicians and Surgeons.

The Catholic Guidance Clinic, which was organized in 1938, is carrying an ever-increasing case load and is rendering diagnostic and treatment services to its Catholic clientele.

The Hamilton County Juvenile Court under the direction of Judge Charles W. Hoffman has been one of the leading sociolegal agencies in this country for many years. Although maintaining its own psychiatric unit, it has availed itself of the diagnostic and therapeutic services of the different mental hygiene and psychiatric facilities of the county, in the study and prevention of juvenile delinquency and criminality.

The Cincinnati Public Schools in addition to extensive psychological services has added a part-time psychiatrist to the staff.

In conclusion, mention should be made of the organization in the past decade, largely through the efforts of Dr. E. A. Baber, superintendent of Longview State Hospital, of the Cincinnati Society of Neurology and Psychiatry. This young and growing organization, whose membership embraces neurologists and psychiatrists from neighboring cities and states, has given impetus to psychiatric activity in this area.

THERAPEUTIC RESULTS AND CLINICAL MANIFESTATIONS FOLLOWING THE USE OF TETRAETHYLTHIURAM DISULFIDE (ANTABUSE) [1]

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I. INTRODUCTION

The use of tetraethylthiuram disulfide (Antabuse) as an adjunct in the treatment of chronic alcoholism has met with varying degrees of success in the various clinics both here and abroad (1-8). In the 2 years during which this drug has been used, many studies in animals and man have led to a better understanding of the potentialities and limitations of Antabuse.[6]

In this paper 120 cases treated with Antabuse will be reported. Certain animal experiments that help in the evaluation of the drug will also be described.

The cases are distributed as follows: Albany Hospital and Clinic, 77; Buffalo Alcoholic Center,[7] 21; and Trenton State Hospital, 22.

The period of treatment of these patients covered from 3 to 15 months. The animal experiments were conducted at the Albany Medical College.

II. PHARMACOLOGICAL STUDIES

A. *The Effect of Antabuse in Animals* (9)

Single doses of Antabuse were given to dogs, rabbits, and rats by stomach tube. The results (Table 1) indicated a low degree of acute toxicity. The signs of toxicity were as follows: nausea and vomiting, diarrhea, anorexia, loss of weight, lethargy, and ascending paralysis with transient periods of remission. A lethal dose produced death by respiratory arrest.

In chronic toxicity studies, 20% of a respective lethal dose was given orally to dogs, rabbits, and rats. The same signs of toxicity were obtained after a number of weeks. Upon discontinuing the drug, the animals recovered completely.

The histopathology of the sacrificed animals, although incomplete as yet, indicates the results as shown in Table 2. Of particular interest were the kidney lesions, which looked like a lower nephron nephrosis, and the patchy demyelinization of the brain, which resembled the lesions seen in multiple sclerosis. The cardiac edema was very slight and was not found in all the animals.

TABLE 1

ACUTE TOXICITY OF ANTABUSE GIVEN ORALLY IN A SINGLE DOSE

Animal	Vehicle	Toxic dose gm./kg.
Rat	Aqueous	LD_{50} 8.6 ± 0.37
Rat	Cottonseed oil	LD_{50} 1.3 ± 0.35
Rabbit	Aqueous	LD_{50} 1.8 ± 0.13
Dog	Aqueous	3.5

TABLE 2

MAJOR PATHOLOGICAL LESIONS FOUND IN ANIMALS GIVEN TOXIC DOSES OF ANTABUSE

Organ	Pathology
Spleen	Focal hemorrhage; pigmentation
Kidney	Degeneration of distal convoluted tubules
Lungs	Congestion
Liver	Focal necrosis; fatty infiltration
Brain	Demyelinization
Stomach	Gastritis
Adrenal	Congestion
Heart	Edema

[1] Read at the 106th annual meeting of The American Psychiatric Association, Detroit, Mich., May 1-5, 1950.

[2] Department of Physiology and Pharmacology, Albany Medical College.

[3] Department of Psychiatry, Albany Medical College.

[4] Trenton State Hospital.

[5] Ellis Hospital.

[6] The Antabuse was generously supplied by Ayerst, McKenna and Harrison, Ltd.

[7] These cases were studied by Kenneth Goldstein, M. D., Buffalo, N. Y.

B. *The Effect of Antabuse in Human Subjects*

In daily doses greater than 1 gram, some undesirable clinical manifestations were evident in many patients: gastrointestinal disturbances, fatigue, somnolence, visual disturbances, decreased mental acuity, and changes in sexual potency. These effects when found were reduced or eliminated entirely with a decrease in the daily dose to ½ gram. These symptoms may also be due in part to the psychological effect of having removed the crutch of alcohol from the patients.

Some patients who were started on Antabuse within 4 days after a severe alcoholic debauch developed palpitation, fall in blood pressure, dyspnea, and malaise. A questionable peripheral neuritis was encountered in 3 cases, temporary confusion in 3 cases, and a transitory Korsakoff's psychosis in one. These effects were not alarming. They never occurred if the drug was started one week or more after the last ingestion of alcohol.

The following laboratory tests were performed at intervals on 30 patients who have been receiving Antabuse for 6 to 9 months.

Blood: Routine CBC, hb., differential, CO_2 comb. power, protein, A/G.

Liver: Thymol turbidity, cephalin floc., alk. phosphatase, bilirubin, cholesterol and esters, bromsulfalein.

Kidney: Routine urine, P.S.P., Mosenthal, N.P.N. FBS, glucose tolerance, BMR, ECG, EEG.

With the exception of 2 cases in which there was a slight increase in the thymol turbidity and cephalin flocculation, the results of these tests were negative. In four patients initial ECGs showed evidence of previous myocardial infarction. Their ECGs at present have essentially the same patterns. The 17-ketosteroid excretion was determined in 6 of the patients who complained of decreased sexual potency. The excretion was normal. Two patients developed a transient leukopenia with no change in the differential count. One patient developed a papulo-follicular eruption that responded to pyribenzamine and did not recur on continuing the Antabuse.

The results to the present time indicate that in therapeutic amounts Antabuse has a very low toxicity in human subjects.

C. *The Alcohol-Antabuse Syndrome in Rats* (10)

Rats were given a 0.3 gm./kg. to 5 gm./kg. priming dose of Antabuse, followed by a 10 ml./kg. test dose of 50% alcohol. The control rats, given only the alcohol, showed signs of intoxication that seldom lasted for more than two hours. The Antabuse-primed rats, however, when given the test dose of alcohol, were intoxicated for as long as 20 hours. The duration of the intoxication was proportional to the priming dose of Antabuse. The rats retained their sensitivity to alcohol for 10-15 days. The duration of the alcohol sensitivity was proportional to the priming dose of Antabuse.

In another experiment, a group of rats were given 0.3 gm./kg. of Antabuse. Each day thereafter these rats were given the test dose of alcohol. None of the rats survived more than 6 test doses of alcohol. The controls not given Antabuse were not affected adversely.

These results indicate a greatly increased toxicity of alcohol in animals primed with Antabuse.

D. *The Alcohol-Antabuse Syndrome in Human Subjects*

The signs and symptoms of this syndrome (Table 3) could be elicited by giving a test dose of alcohol as early as 3 hours after a priming dose of Antabuse of 1-3 grams. It may be seen that every patient developed

TABLE 3

ALCOHOL-ANTABUSE SYNDROME IN HUMAN SUBJECTS

Symptoms after test dose equivalent to 8 ml. alcohol; 54 patients

Sign or symptom	No. affected
Erythema	54
Warmth	54
Tachycardia	53
Hypotension	50
Tachypnea	49
Dyspnea	28
Sleepiness	12
Tears	8
Syncope	5
Diaphoresis	3
Abdominal pain	2
Diplopia	2

the descending erythema with a feeling of warmth. The tachycardia, hypotension, and tachypnea were also found in almost all the patients. The degree of dyspnea varied from a slight shortness of breath to a marked tightness about the neck and the feeling of a heavy weight on the chest. Transient signs and symptoms of cardiac failure developed in one patient. He was not continued on Antabuse.

The syncope seen in 5 of these patients was not alarming. It was attended by the usual prodromata, each patient stating in advance that he was passing out. Recovery was rapid with only psychic sequelae. These patients stated that a fainting spell generally attended their overindulgence in alcohol. Nausea and vomiting described by other workers did not occur, owing perhaps to the small amount of alcohol used in these tests.

TABLE 4

ALCOHOL-ANTABUSE SYNDROME IN HUMAN SUBJECTS

ECG changes in 50 patients	
Decreased T	38
Rate over 100	40
Decreased Q R S	13
$Q_2 Q_3$	7
Axis shift	5
Ectopic beats	2
Elevated ST	2
Sagging ST	1

The ECGs studied in 50 patients (Table 4) showed many nonspecific changes. They could be explained for the most part as due to the tachycardia. These changes often accompany acute alcoholism without Antabuse. Fourteen Antabuse patients were given from 4 to 6 test doses of alcohol over a period of 5 weeks. The ECGs of 2 of these patients showed no marked change. In one patient, the ECG effect diminished slightly with each succeeding test dose. The other 11 patients showed a marked increase in the sensitivity of the heart to alcohol with each succeeding test dose, indicating that too frequent testing with alcohol is not without danger (as was found in the rat experiments).

An attempt was made to quantify the alcohol-Antabuse syndrome (Table 5). Erythema was the earliest sign, manifesting itself 8 minutes after taking the alcohol. The flushing was seen first over the malar eminences and in the conjunctivae, and descended progressively. Occasionally, the redness extended to the toes and was accompanied by a slight pruritis. The skin temperature increase, measured by a thermocouple placed on the cheek, was very slight and was not found in all patients. The feeling of warmth reached its maximum in about 20 minutes. The arm-to-tongue circulation time measured with sodium saccharine indicated an average decrease of 7 seconds at 20 minutes.

TABLE 5

ALCOHOL-ANTABUSE SYNDROME IN HUMAN SUBJECTS

Sign or symptom *	Mean time of appearance in minutes
Erythema (conjunctivae and malar are first)	8.3
Skin temperature (+2.6° F. cheek measured)	16
Warmth (maximum effect)	20
Circ. time A-T (7.1 seconds faster).	20 †
Sens. to alcohol (feels like 11 times the test dose)	21
Tachypnea (+5.7 mean of maxima).	22
Dyspnea (greatest effect)	24
Tachycardia (+30 mean of maxima)	26
B. P. change (−19/−27 mean of maxima)	26

* Symptoms last 40 minutes on average and disappear in reverse order.
† Denotes time of measurement rather than appearance.

The tachypnea, dyspnea, tachycardia, and hypotension reached their maxima at approximately the same time, which was also the time at which most of the patients felt the greatest effect subjectively. It was considered expedient to administer oxygen to those patients whose cardiac rate was unusually high. During the course of the test, each patient was asked to state as closely as possible the amount of alcoholic beverage he felt as though he had imbibed. There was considerable variation in answers, as was expected. The mean maximum sensitivity increase was roughly equivalent to 11 times the test dose. A number of the patients could not answer the question, stating that they had never felt so drunk. A few felt that they had become too drunk in too short a time and refused to evaluate their degree of intoxication.

The mean duration of the syndrome based upon the over-all picture and in particular upon the return of the blood pressure and cardiac rate to normal was 40 minutes. The erythema generally persisted for at least 2 hours.

In 6 patients, the test dose of alcohol was repeated after a lapse of one week and, at the height of the reaction, one gram of ascorbic acid was given intravenously. The ascorbic acid appeared to cause a more rapid return to normal.

The blood acetaldehyde levels during the test dose were determined on 6 patients. The acetaldehyde increased during the first 30 minutes after the ingestion of the alcohol and then decreased, returning to normal in 7 hours. With the same dose of alcohol without Antabuse, the acetaldehyde increase is about $\frac{1}{5}$ of that with Antabuse. It is well known, however, that with larger doses of alcohol without Antabuse there is a marked and sustained acetaldehyde increase(8).

The results of these tests suggest that the syndrome may be explained by the action of Antabuse or one of its products in blocking the enzymes that permit the complete oxidation of alcohol. A small amount of alcohol in an Antabuse-treated patient behaves like a dose many times as great and produces the signs and symptoms of the very large dose of alcohol. With the excretion or detoxification of the intermediary products the patient quickly returns to normal.

III. The Treatment of Chronic Alcoholism with Antabuse

A. *Selection of Patients for Antabuse Therapy*

The selection of patients for Antabuse therapy was completely individualized. Each alcoholic was considered as presenting a separate problem. A complete medical and psychiatric history was obtained with particular emphasis on the possible causes and characteristics of the alcoholic habit. A thorough physical and neurological examination was made and supported by laboratory studies.

The following pathological conditions were generally considered contraindications to Antabuse therapy although exceptions were made in particular cases: cardiovascular disease, cachexia, cirrhosis of the liver, diabetes, and advanced arteriosclerosis. Neurological and psychiatric contraindications were epilepsy, Korsakoff's psychosis, suicidal tendencies, persons who live alone, vagrants or migrants, and psychopathic personalities. These contraindications were based on the premise that Antabuse or the alcohol-Antabuse syndrome might be harmful in these conditions, and that there was no point in starting the therapy on a person who would not cooperate by taking the drug.

B. *The Priming Dose of Antabuse*

No particular dosage schedule was found to be superior to any other. The priming dose was therefore given in a manner that would be most impressive to any given patient. The minimum requirements for the production of alcohol sensitivity were found to be a dose of Antabuse not less than 1.5 gm. in 24 hours, and a time lapse of at least 3 hours after this total amount has been given. A good result was always obtained by giving the tablets in a single dose and waiting for the necessary 3-hour interval before giving the test dose of alcohol.

C. *The Test Dose of Alcohol*

In the early work the test dose of alcohol was used to determine the optimum maintenance dose of Antabuse. This was found to vary from $\frac{1}{8}$ to $\frac{1}{2}$ gm./day. During these reactions the characteristics of the alcohol-Antabuse syndrome and the use of ascorbic acid as a partial antidote were studied.

A number of methods were employed in giving the test dose. One investigator gave repeated 5 to 10 cc. of whiskey in slow sips until the reaction occurred. Others used 15 to 30 cc. of whiskey in one dose. A sufficient reaction was usually obtained with 15 cc. of 100 proof whiskey. In all cases the test was performed in the hospital. Oxygen, ascorbic acid, and a cardio-pulmonary resuscitation tray and apparatus were available. The patient and a control, usually the wife or husband, were given the whiskey from the same bottle. The vital signs and, when possible, the ECG were observed during the

reaction. As the reaction progressed, the patients were allowed to see the developing erythema in a mirror. The danger of drinking while on Antabuse was explained. The violence of the syndrome convinced most alcoholics that it was very unpleasant to drink while taking Antabuse. This period was used for psychotherapy and the establishment of a close relationship between the physician and the patient and his family.

D. *The Maintenance Dose of Antabuse*

The maintenance dose varied from $\frac{1}{8}$ to 0.5 gm. per day. This was determined for each patient and depended largely upon the signs and symptoms experienced by the patient on Antabuse. The dose level was adjusted to keep the patient as free from these effects as possible, while still maintaining a sufficient alcohol sensitizing effect of Antabuse.

E. *The Management of the Patient on Antabuse*

This was a very trying period for the physician and patient as well as the patient's family. Deprived of his alcohol splint the patient used the physician as his new support. The somnolent effect of the Antabuse helped to relieve the vague restlessness that often occurred during total abstinence. Other sedation was sometimes required. Some patients, particularly those who were coerced into starting the therapy, stopped the drug soon after their discharge from the hospital or clinic.

During the initial follow-up period, the patients reported to the clinic for interviews at regular frequent intervals. The critical period occurred at about 3 months and the question was often raised whether to repeat the test dose at this time. Psychotherapy was continued during these interviews. Discussions of vocational adjustments, marital situations, parental conflicts over children, recreational guidance, and other questions were considered. The mate was encouraged to attend these discussions. The advisability of dropping drinking friends was brought up. The A.A. was used as much as possible.

If a slip occurred and the patient returned to alcohol after a few months, he was not lectured or moralized but started out again on Antabuse. The next slip generally occurred after a longer interval.

F. *Inhibiting of Alcohol by a Patient While on Antabuse*

The most important precaution had been taken during the test dose when the patient and family were given a careful explanation of the possible consequences of drinking while on Antabuse. During the early stages of the treatment it was, therefore, preferable that the patient be treated in a hospital or clinic for a number of days.

A number of patients have volunteered the information that they "test dose" themselves every few weeks or so. On an Antabuse maintenance dose of $\frac{1}{8}$ gm. each day, a bottle of beer or 2 ounces of whiskey generally produced a reaction intense enough to discourage further drinking for that session.

Fortunately the erythema and conjunctival injection are the first signs of having taken alcohol. Although the other signs and symptoms soon follow, the alcoholic would feel quite miserable and would inform his friends or family, who would call the hospital or physician. Each Antabuse patient carries a clinic card so that, in the event of any emergency, treatment can be instituted by the hospital or physician seeing the case.

The greatest danger would occur in a patient who imbibed much more than this amount before the syndrome had a chance to assert itself. This occurred in 5 patients in this series. Two of them started to drink immediately upon discharge from the hospital. They were returned in a state of impending collapse. Oxygen, fluids, and sympathomimetics were used for cardiovascular respiratory support. After these intensive measures they quickly recovered and in a few days were discharged without Antabuse.

One patient slipped after he had been hounded by his creditors for a number of days. He drank about one quart of beer. His Antabuse maintenance dose had been $\frac{1}{4}$ gram every other day. He was deep in the alcohol-Antabuse syndrome on admission to the hospital. Five minutes after having been given 1 gram of ascorbic acid intravenously he seemed to have achieved a remarkable recovery. He walked around for a few minutes, demanded

and received food and soundly berated the hospital staff, his wife, and creditors. This lucid interval was of brief duration. His intoxication returned and ten minutes later he staggered back to his bed to sleep it off. He awoke 8 hours later with no recollection of having come to the hospital. This was his first slip in 5 months.

Two other patients reported that they had taken a few drinks and had become violently intoxicated. A feeling of guilt inhibited them from calling the hospital. They suffered no ill effects, and continued the Antabuse on the following day.

G. *Therapeutic Results with Antabuse*

The best results have been obtained in those alcoholics who desire to abstain from drinking and who require something more than the urging of a family or close friends to accomplish their abstinence. Such patients were generally of good intelligence with some maturity. The experience of the test dose and the presence of Antabuse in their system were fairly good deterrents for "that first drink." They, furthermore, had a wife, husband, employer, or close friend who saw to it that the medication was given each day and who realized the necessity of continuing the treatment in order to prevent a relapse.

TABLE 6

THERAPEUTIC RESULTS WITH ANTABUSE IN 120 PATIENTS AFTER 9 MONTHS

	Number of patients		
	Treated	Improved	Reverted
Albany	77	41	36
Buffalo	21	13	8
Trenton	22	20	2
	120	74	46

The summary (Table 6) is quite misleading because of the vagueness in the term "improved" and particularly because of the reversion of many patients from abstinence to alcoholism in time. This is well illustrated by a group of 25 patients who were under treatment for 15 months (Table 7). Whether the 12 improved patients will remain cured is of course unknown.

In the Albany group of patients, there were 60 cures out of 77 at approximately 6 months. At 9 months, the number cured decreased to 41.

In general a number of alcoholics stop taking the Antabuse very soon after being started on it. Among those who continue the therapy, very few are lost prior to 3 months. At this time many of them show a disinclination to continue the drug. It has been found that another test dose at this time is a very helpful reminder.

With a better selection of patients, an increase in the number of investigators, and further research, the therapeutic results with Antabuse should improve. It is most important that the drug be administered under careful medical psychiatric supervision. Indiscriminate use by the private practitioner without the aid of a therapeutic regime, hospital or clinic, and without psychiatric consultation is to be condemned.

TABLE 7

THERAPEUTIC RESULTS WITH ANTABUSE IN 25 PATIENTS AFTER 15 MONTHS

	3 months	15 months
Abstainers	17	9
Moderate drinkers	1	3
Unimproved	7	13
	25	25

SUMMARY

The observations made during the treatment of 120 chronic alcoholics with Antabuse are reported. Certain animal experiments are also described.

1. In large doses Antabuse is toxic to animals. Death by respiratory arrest is preceded by an ascending paralysis. The Antabuse in these large doses produces liver, spleen, kidney, and C.N.S. damage.

2. In human subjects, large doses produce gastro-intestinal and nervous symptoms. In therapeutic amounts there are no apparent effects on liver, kidney, blood, heart, or brain. Patients should not be given Antabuse until at least 4 days have elapsed since their last alcoholic debauch.

3. In rats a moderate dose of Antabuse markedly increases the toxicity of ethyl alcohol.

4. In patients on Antabuse therapy a definite pattern of reaction may be seen

after a test dose of alcohol. This syndrome, subjectively and objectively, is much like that observed after the ingestion of a large quantity of alcohol at one time. Cardiovascular collapse may result. Supportive therapy and intravenous ascorbic acid may abort the syndrome. There is an increased blood acetaldehyde during the reaction.

5. The selection of patients for therapy must be on an individual basis. The patient must be willing to take the drug. He should have no organic disease that might endanger his life if he should imbibe a small amount of alcohol.

6. A test dose of alcohol is given each patient to determine the effectiveness of the Antabuse, and to give him the startling experience of becoming violently intoxicated on a very small amount of alcohol.

7. Intensive psychotherapy must be employed in the management of the alcoholic on Antabuse. The patient's family and friends and the A. A., social agencies, and others should be called upon for the rehabilitation of the patient.

8. Each Antabuse patient should carry a clinic card indicating that he is on Antabuse therapy, so that if he should drink and have a reaction, emergency therapy may be started if required. Some experiences with such "slips" are described.

9. Of the 120 patients reported in this paper, 74 are improved. The initial "cure" rate was much higher. Most slips occurred at 3 months. The question is raised whether a test dose should be given every 3 months.

10. It is most important that the drug be administered under careful medical psychiatric supervision. Indiscriminate use of Antabuse by the private practitioner without the aid of a therapeutic regime, hospital or clinic, and without psychiatric consultation is to be condemned.

BIBLIOGRAPHY

1. Hald, Jens, et al. Antabuse in the treatment of alcoholism. Acta pharmacol. Scand., **4**: 285, 1948.

2. Hald, Jens, and Jacobsen, Erik. A drug sensitizing the organism to ethyl alcohol. The Lancet, **2**: 1001, Dec. 25, 1948.

3. Martensen-Larsen, O. A new method in the treatment of alcoholism. Nye Linier i Alkoholisthehandlingen, Ugeskrift for Laeger, **110**: 1207, 1948.

4. Jacobsen, Erik, and Martensen-Larsen, O. Treatment of alcoholism with antabuse. J.A.M.A., **139**: 918, April 2, 1949.

5. Bell, R. C., and Smith, H. Ward. Preliminary report on clinical trials of antabuse. Canad. M. A. J., **60**: 286, 1949.

6. Glud, E. Treatment of alcoholic patients in Denmark with "Antabuse" with suggestions for its trial in United States. Quart. J. Stud. Alc., **10**: 185, 1949.

7. Carver, A. E. Tetraethylthiuramdisulphide in the treatment of alcoholics. Brit. M. J., **2**: 466, 1949.

8. Barrera, S. Eugene, et al. The use of Antabuse in chronic alcoholics. Am. J. Psychiat., **107**: 8, July 1950.

9. Child, George P. Studies on the pharmacology and toxicology of antabuse. J. Pharmacol. Exp. Therap., **98**: 1, 1950.

10. Child, George P., et al. Studies on the pharmacology of Antabuse and the Antabuse-alcohol syndrome in animals and man. Fed. Proc., **9**: 1, 1950.

11. Stots, Elmer. A colorimetric determination of acetaldehyde in blood. J. Biol. Chem., **148**: 585, 1943.

EMOTIONAL ASPECTS OF CARDIAC DISEASE[1]

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A consideration of the problems of the cardiac patient presents an interesting illustration of the complex relationships that may develop between the patient, his disease, and his environment. The diagnosis of a cardiac lesion may constitute an overwhelming psychological threat, and many of the symptoms, such as dyspnea, orthopnea, and anginal pain, may be alarmingly sudden in onset and productive of severe anxiety. The cardiac patient is confronted with a closely interrelated system of physiologic and psychologic stresses that are in large part inseparable. The anxiety engendered by the disorder may tax both cardiac and psychologic reserves and exert an unfavorable influence upon the medical course and response to therapy, as well as upon the total personality function.

Effects Exerted by Emotions Associated with Heart Disease Upon the Basic Cardiovascular Disorder.—So long as the heart is able to maintain the circulation at an adequate level for the body's circulatory needs, the patient remains compensated. If the balance between the circulatory demands and the cardiac reserve cannot be maintained, heart failure or cardiac decompensation develops. This system can be thrown out of balance on the one hand by factors that create a greater demand than the heart can meet, *e.g.*, undue exertion, infection, onset of arrhythmias, increase in blood volume due to retention of salt and water, etc. On the other hand, imbalance and failure can likewise result from diminution of myocardial efficiency as a result of inflammation, diminution in coronary blood supply, and again the arrhythmias that may reduce the total efficiency of cardiac function. Increased demand and diminished cardiac efficiency may also occur in combination.

Myocardial ischemia may result from acute narrowing of the coronary bed, or the capacity of the arteriosclerotic coronary bed may remain constant and yet be rendered relatively inadequate by an increase in the amount of work required of the myocardium or a decrease in the pressure under which the blood is propelled through it.

It has been demonstrated that anxiety and emotional tensions may influence the circulatory equilibria (a) by increasing the amount of work required of the heart (1-3), and (b) by bringing about a diminution in cardiac efficiency (either through interference with the adequacy of the coronary circulation or through interference with some of the intrinsic cardiac mechanisms) (4-6). From this it is clear that emotionally significant life events or situations (including the diagnosis of heart disease itself) that are attended by anxiety and tension may well contribute to the development of congestive failure, cardiac arrhythmias, and myocardial ischemia.

A recent study in our hospital bears out this expectation (7). Twenty-five consecutive, unselected patients with congestive heart failure were studied by Dr. William Chambers, Dr. Eugene B. Ferris, and myself. Our conclusion was that emotional factors played a predominant role in the precipitation of heart failure in 19 patients, or 76% of the group. The inference is obvious, *viz.*, that the tensions related to life situations and the anxieties associated with the diagnosis and symptoms of heart disease must be dealt with if the therapy of cardiac disease is to attain its optimal effect.

Effects Exerted by Heart Disease Upon Total Personality Function.—In considering these effects 2 general categories arise for discussion. First there are the direct effects of disturbed physiologic function. Congestive heart failure may be accompanied by disturbances in cerebral circulation with resultant cerebral anoxia and delirium, which may lead to overexertion, refusal to accept medication, etc. Chronic cerebral anoxia or repeated acute episodes (*e.g.*, as occur in

[1] Read at the 106th annual meeting of The American Psychiatric Association, Detroit, Mich., May 1-5, 1950.

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Stokes-Adams syndrome) may accelerate vascular degenerative brain disease and thus contribute to the development of the degenerative organic dementias. These are primary direct effects of the cardiac disease on the cortex.

The second category has to do with specifically psychologic sequences. It is these sequences that have received the least attention and deserve the most. Following the initial phase of acute anxiety related to the onset of the condition, the process of integrating the awareness of the lesion into the patient's concept of himself and his total pattern of living and interpersonal relationships must take place. Ideally, it is hoped that he will be able to accept objectively a realistic appraisal of his limitations and proceed to set up an appropriately modified pattern of living, which will allow for the most constructive and efficient channelization of his residual capacities. His ability to accomplish this is dependent upon several factors, (1) his dynamic personality structure, (2) the specific meaning of heart disease to him, and (3) the attitudes assumed by those about him, including the physician and hospital personnel.

The adjustment may fall short in many ways. The cardiac condition may be incorporated into a pre-existent neurotic pattern or the anxiety engendered may precipitate neurotic behavior in a previously well-adjusted personality. The disease may acquire specific psychological meaning in patients who have previously witnessed cardiac disease or death in important life figures who have been the objects of ambivalent, conflictful feelings. Identification and guilt mechanisms may enter into the feelings such individuals develop toward their own disease and give rise to depression and feelings of hopelessness. Excessive dependent needs or the needs to control the environment may lead to prolonged invalidism for secondary gain and the satisfaction of unconscious goals. The illness may be utilized to escape from some emotionally charged real-life situation, and further attempts at working the realistic problem through to a mature solution may be blocked since it has been effectively disguised and submerged. The patient may be reluctant to relinquish this defense as he improves physically. On the other hand, because of underlying castration anxiety or guilt over mobilization of dependency needs, the threat of illness may be so intolerable as to lead to an irrational denial of the lesion with a resultant self-destructive acting out, and refusal to cooperate with necessary medical treatment. The two latter complications (binding of anxiety and irrational denial) form an enormously important part of the problem of cardiac disease in childhood and adolescence, and rebellious denial is likewise a frequent complication of coronary disease in active, aggressive men.

Emotional factors, then, may enter into the problems of the cardiac patient in the following ways. In the patient with structural heart disease, untoward clinical episodes may be precipitated and sustained by emotionally stressful life situations. The anxiety engendered by the diagnosis of heart disease and its symptoms may further tax the diseased system and aggravate the physiologic disturbance. Finally, the psychological adjustment to the situation may fall short and give rise to neurotic attitudes and behavior that may interfere in a general way with the patient's total personality function and specifically in some instances with his ability to utilize effectively the prescribed medical treatment.

Treatment. With the growing interest in psychosomatic relationships, the psychiatrist is more and more frequently being called upon for help in the evaluation and treatment of conditions that were previously regarded as "purely somatic." In addition to the help that he can provide in the handling of the problems of delirium and acute anxiety, for which he is specifically equipped both in training and experience, the psychiatrist can offer the general physician or internist invaluable assistance in the management of cardiac problems by helping him to integrate the medical procedures into the over-all attempt to help the patient with his psychological adjustment. *Actually it is in the doctor-patient relationship, as it develops first in the diagnostic period and later in the manner of handling such medical measures as may be indicated, that much can be accomplished in dealing with the emotional*

problems. Perhaps the most important aspect of the psychiatrist's role is to help and advise the physician in setting up and effectively utilizing his relationship with the patient.

From our experience over the past 3 years with the treatment of such patients by internists in the psychosomatic and hypertension clinics of the Cincinnati General Hospital, we have derived the following general principles for the combined medical-psychological regimen.

The most important aspect of this combined approach is the handling of the patient's anxiety. Many of these patients are deeply threatened and in need of a strong dependable relationship, within the framework of which reassurance can be offered to alleviate the anxiety stirred up by the symptoms and the *fears of heart disease.* The building of such a relationship starts with the initial contact, in which the doctor listens with a calm, unhurried, and sympathetic attitude to the patient's own version of the history. This often has additional value in supplying important anamnestic material, which might be missed in a more direct question and answer type of interview. Incidentally, the patient may experience a good deal of relief from tension through the sharing with a supporting figure certain emotionally disturbing life situations and his reactions to them. This is true even in the acute situation where the fear of impending death may give rise to a striking lowering of usual psychologic defenses and the outpouring of intimate and highly charged feelings. In the study referred to above (7), in no instance was any deleterious effect upon the physiologic status noted, and in many instances there seemed to be little question that there was both emotional and physiologic improvement. The psychotherapeutic value of careful and efficient physical examination and performance of the indicated laboratory procedures cannot be overemphasized. This, however, can be a two-edged sword, since the patient may take excessive studies as an indication of the doctor's anxiety. It is, the final analysis, the physician's manner and attitude in carrying out this phase of the diagnostic procedure that determines its psychotherapeutic value in imparting to the patient the feeling that his sympathetic friend is also free of anxiety and in control of the situation. Upon this background then, the doctor can build deep-going reassurance, and medications that are prescribed acquire psychological meaning that may increase their effectiveness beyond their pharmacologic activity. At this point, the physician may securely and authoritatively debunk the patient's irrational fears and take pains to discuss with him in clear terms, and without alarm, the realistic facts concerning his illness, including the long-range plan for management. Avoidance of unnecessary limitations can reinforce the impression that the physician is not unduly alarmed. In considering restrictions, it is important to take into consideration the individual personality in order to avoid the pitfall of inducing more strain upon the heart by the apprehension the restriction may cause than would be imposed by the activity in question. It is also helpful to place constructive emphasis upon the things that the patient can do, and to suggest substitutes for activities that must be withheld.

In the course of the interviews, the physician gains some understanding of the patient's dynamic personality make-up and the nature of the environmental stresses. This provides a practical frame of reference for handling the intrinsic and extrinsic tensions through techniques of planned relationship, environmental manipulation, utilization of appropriate professional and community resources, etc. Often it is necessary or desirable to adapt the handling of the therapeutic régime to the underlying personality pattern, rather than to attempt to change the patient's personality.

The psychiatric consultants in the clinic have directed their energies in 2 major directions. First, toward an evaluation of the patient's dynamic personality structure, his reaction to the illness, and the role of emotional stress in the precipitation of the disorder; and second, toward an evaluation of the status of the doctor-patient relationship. On the basis of such an appraisal of the total situation the consultant may then:

(1) Help the physician to understand the principles of the regimen and to deal with the emotional aspects of the clinical prob-

lem, particularly problems of prolonged illness and rebellious denial. These irrational attitudes must be recognized as symptoms and dealt with as such.

(2) Advise on the choice and utilization of techniques available to the physician for handling the situation.

(3) Determine whether major psychotherapy is indicated and feasible, or advise on how to adapt the general regimen to fit the patient's personality structure where this is necessary or more practicable.

(4) Deal with the physician's anxiety where indicated.

Tension arising in the doctor-patient relationship (*i.e.*, transference, countertransference difficulties) may intensify the patient's anxiety and lead to aggravation of the disease plus an exaggeration of the neurotic defenses. In most instances where the case has been going badly, some difficulty in this area has been detected. In our experience, the transference countertransference problems fall into 2 general categories. First, hostility and anxiety may be stirred up in the physician if he fails to see neurotic attitudes toward the illness and prescribed treatment as symptoms of an underlying emotional disorder.

A 67-year-old white male with a past history of chronic alcoholism and extreme pseudo-masculine behavior suffered a myocardial infarction and was hospitalized. His objections to the prescription of absolute bed rest, denial of smoking privileges, etc., arose largely out of severe need to deny the castration anxiety and strong dependency strivings stirred up by his illness. His "uncooperative attitude" provoked overt hostile attitudes in the physicians and hospital personnel and he was repeatedly reprimanded and heavily sedated with bromides. At the time of consultation (4 weeks after admission) he had suffered a second myocardial infarction and exhibited a toxic bromide psychosis. When the origin of his "uncooperative" attitudes was clarified, the régime was appropriately modified to include frequent and warm reassurance, an occasional cigarette, 2 ounces of whisky each evening and permission to sit in a chair, which he was doing anyway unless physically restrained. He required no further sedation and as the toxic psychosis cleared he was found to be a cooperative patient and had an uneventful recovery.

The second type of complication frequently encountered arises out of a failure to establish for the patient a clear and realistic concept of the status and meaning of his illness. This often stems from countertransference involvement, such as an excessive identification with the patient, and may engender either overprotective or overcasual attitudes in treatment. Overprotectiveness may lead to excessive restriction, which in turn may give rise to rebellion with its sequelae, or to passive submission resulting in unnecessary limitations of the patient's potential functional capacity. Casual attitudes and overpermissiveness may lead to harmful overactivity.

A 15-year-old white girl had suffered her initial attack of rheumatic fever with mitral valvulitis at the age of 9. Following convalescence she was sent to a school for crippled children and greatly restricted in her range of activities. Problems arising in competition with a younger brother and the unhealthy influence of a masochistic and extremely dependent mother produced in her a great need to deny her illness by activity, and through the development of personality techniques that would enable her to overcome her feelings of inadequacy (represented by her heart lesion) by being especially lovable and pleasant. At the age of 14 she was transferred to a public high school. Her ingratiating manner won over her new doctor and the teachers, and since her lesion was minimal, she was given carte blanche and encouraged to achieve. At the time of her admission to the hospital a year later for a recurrence of acute rheumatic fever, it was learned that she was busy from 7 AM until midnight and that her activities included acting as a nurse and companion for a spastic schoolmate; participation in track, swimming, and basketball; and helping with the housework at home. At the same time, she was maintaining an honor roll status in her studies and was spending some time each day in the pursuit of a romance with a young man whom she planned to marry in the near future. It was only after her winning mannerisms were viewed objectively as a defense against anxiety that the basic fears could be recognized and dealt with. The path was then cleared for her to accept a more realistic appraisal of her status, potentialities, and limitations.

An overcasual attitude may also originate in exaggerated therapeutic ambition and enthusiasm to reassure the patient and alleviate anxiety. "Hollow reassurance" may be accurately perceived by the patient with the result that he becomes uncertain of the doctor's sincerity or ability.

SUMMARY

The diagnosis of heart disease is an emotionally charged life situation. The anxiety engendered may tax the reserves of the diseased cardiovascular system, and influence

the medical course and response to therapy, as well as the patient's personality function. The doctor-patient relationship is the most important factor in the total handling of the cardiac patient; it provides the matrix within which all aspects of the problem may be organized into a unified process. The psychiatrist who is supervising or advising a physician treating a cardiac patient will find that his efforts will be most effective and satisfying, in most instances, when they are directed toward alleviating anxiety in both the patient and the physician, and in fostering between them a constructive therapeutic relationship.

BIBLIOGRAPHY

1. Stead, E. A., Jr., et al. The cardiac output in male subjects as measured by the technique of right atrial catheterization. Normal values with observations on the effect of anxiety and tilting. J. Clin. Invest., **24**: 326, 1945.

2. Hickam, J. B., et al. Cardiovascular reactions to emotional stimuli. Effect on the cardiac output, arteriovenous oxygen difference, arterial pressure, and peripheral resistance. J. Clin. Invest., **27**: 290, 1948.

3. Stevenson, I., et al. Circulatory dynamics before and after exercise in subjects with and without structural heart disease during anxiety and relaxation. J. Clin. Invest., **28**: 1534, 1949.

4. Katz, L., et al. Psychosomatic aspects of cardiac arrhythmias. A physiological dynamic approach. Ann. Int. Med., **27**: 261, 1947.

5. Duncan, C. H., et al. Life situations, emotions, and paroxysmal auricular arrhythmias. Psychosom. Med., **12**: 23, 1950.

6. Wendkos, Martin H. The influence of autonomic imbalance on the human electrocardiogram. I. Unstable T waves in precordial leads from emotionally unstable persons without organic heart disease. Am. Heart J., **28**: 549, 1944.

7. Chambers, W., et al. The rôle of emotional stress in the precipitation of congestive heart failure. To be published.

HISTORICAL NOTES

A LETTER FROM FREUD

April 9th 1935

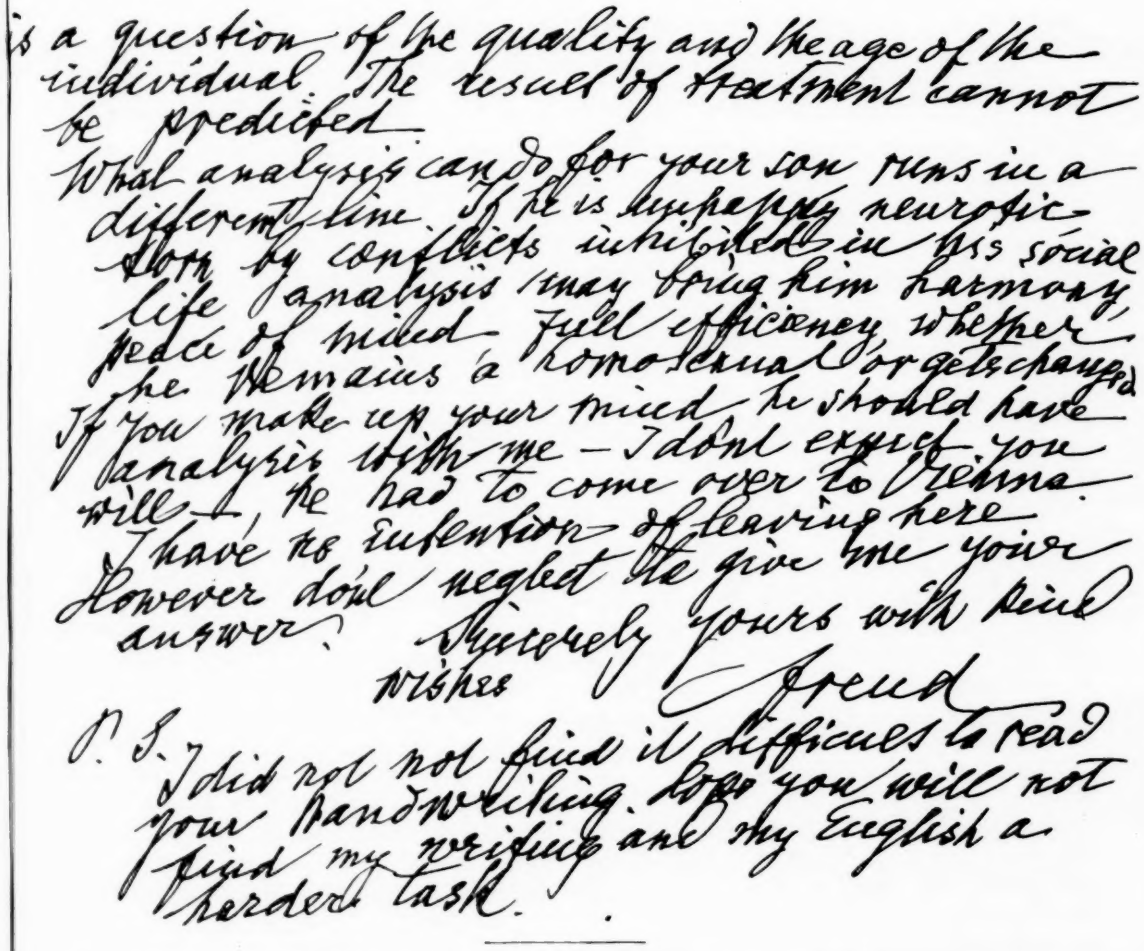
PROF. Dr FREUD

[redacted] WIEN, IX., BERGGASSE 19

Dear Mrs [redacted],

I gather from your letter that your son is a homosexual. I am most impressed by the fact that you do not mention this term yourself in your information about him. May I question you why you avoid it? Homosexuality is, assuredly no advantage but it is nothing to be ashamed of, no vice, no degradation; it cannot be classified as an illness; we consider it to be a variation of the sexual function produced by a certain arrest of sexual development. Many highly respectable individuals of ancient and modern times have been homosexuals, several of the greatest men among them (Plato, Michelangelo, Leonardo da Vinci etc.). It is a great injustice to persecute homosexuality as a crime and a cruelty too. If you do not believe me, read the books of Havelock Ellis.

By asking me if I can help, you mean I suppose if I can abolish homosexuality and make normal heterosexuality take its place. The answer is in a general way we cannot promise to achieve it. In a certain number of cases we succeed in developing the blighted germs of heterosexuality which are present in every homosexual in the majority of cases it is no more possible. It


is a question of the quality and the age of the individual. The result of treatment cannot be predicted.
What analysis can do for your son runs in a different line. If he is unhappy neurotic torn by conflicts inhibited in his social life analysis may bring him harmony peace of mind full efficiency whether he remains a homosexual or gets changed. If you make up your mind he should have analysis with me – I don't expect you will – he has to come over to Vienna. I have no intention of leaving here. However don't neglect to give me your answer.
Sincerely yours with kind wishes
Freud
P. S. I did not find it difficult to read your handwriting. Hope you will not find my writing and my English a harder task.

The JOURNAL is indebted to Professor Kinsey for the photostatic copy, reproduced herewith, of a letter written by Sigmund Freud late in his life. The letter was sent recently by an anonymous correspondent who wrote as follows:

DEAR DR. KINSEY:

Herewith I enclose a letter from a Great and Good man which you may retain.—From a Grateful Mother.

A transcript of the letter follows:

April 9, 1935

DEAR MRS. ————:

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What analysis can do for your son runs in a different line. If he is unhappy, neurotic, torn by conflicts, inhibited in his social life, analysis may bring him harmony, peace of mind, full efficiency, whether he remains a homosexual or gets changed. If you make up your mind he should have analysis with me—I don't expect you will—, he has to come over to Vienna. I have no intention of leaving here. However, don't neglect to give me your answer.

Sincerely yours with kind wishes,
FREUD.

P. S. I did not find it difficult to read your handwriting. Hope you will not find my writing and my English a harder task.

CORRESPONDENCE

MENTAL HEALTH PROGRAMS OF THE STATES

Editor, AMERICAN JOURNAL OF PSYCHIATRY:

SIR: In his reply (March 1951 issue) to my letter on "The Mental Health Programs of the Forty-Eight States," Dr. Russell seems to me to set up a stereotype of a health officer who is uneducated in psychiatry and mental hygiene and who is unaware of his lack of education, while at the same time creating a stereotype of psychiatrists "who are specially qualified to lead in community services. . . . ." This same type of thinking marks Bigelow's "Shotgun Wedding" editorial that recently appeared in *The Psychiatric Quarterly.* In actuality, neither health officers nor psychiatrists can be stereotyped. Cooperative work with health officers will prove that many are willing to accept specialist guidance and collaboration in the design and execution of programs; indeed programs in mental hygiene operated by health departments are usually directed by psychiatrists who, however, have immediately available public health personnel for help in planning and for the integration of mental hygiene into other public health programs. On the other hand, complaints that psychiatrists are unable to cooperate enough in community ventures even to use proffered volunteer services are not at all uncommon; they are certainly as frequent as complaints of health officers who demand personal control of mental hygiene programs to the exclusion of the specialist. Most health officers do not expect to do any specialist practice themselves; they do expect to collaborate with specialists to make the specialist's work maximally effective. Dr. Russell also sets up a stereotype when he says that "the state mental hospital has, in every state, at least a nucleus of psychiatrically experienced personnel," and indicates that this means personnel capable of doing mental hygiene in the community. This stereotype cannot be supported with facts.

Dr. Russell assumes that my letter supports the position that the State Health Department should "invariably be the authority." This was not my intent; I meant simply to argue against a positive recommendation in the other extreme, since such would tend to overlook the contribution public health departments can make. We are in a period of administrative research and experimentation and I decried a recommendation that would limit the field of administrative research. My point was that public health skills and personnel are such that they ought to be included in the planning and execution of programs and that there are cases in which administration of educational and clinical programs might be more effective if it were the responsibility of the health department than of the department operating hospitals.

Many psychiatrists are committed to the position that mental hygiene, the promotion of mental health and the prevention of mental disease, is the job of all persons in the community who have influential contact with others. If this be the case, the responsibility for carrying out the job will have to be shared. If we psychiatrists wish our ideas to be made effective in large populations, we must be willing to allow a two-way collaboration. We cannot expect collaboration if we insist on holding all the powers of administration in our own hands. We are not in the position of dosing a patient. We are, rather, collaborators with others of special training and talent different from our own and which we use to do a job with maximal effectiveness. Since this training and these talents are the possession of men whose professional standing and pride is equal to our own in many instances, in all justice we must offer collaboration, not dictation, and in collaboration the authority may rest in the most convenient place. This may not be in the hands of the psychiatrist.

Finally, there is the problem of decreasing the isolation of the hospital. This presents no insurmountable difficulties regardless of the administering agency, since the clinical personnel could and frequently does consist in the same psychiatrists and auxiliary personnel whether this be desirable on the basis of the personnel available, for reasons of training, for furthering the community coordination of the hospital, or for other reasons.

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COMMENT

THE CENTRAL INSPECTION BOARD

In terms of its potential value for the improvement of hospital psychiatry, the task of inspection and rating of mental hospitals by the Central Inspection Board of The American Psychiatric Association may well be one of our most important undertakings. It is also one of the most troublesome and potentially dangerous financial problems of the Association.

The magnitude of the financial burden of conducting a full-scale inspection system, which would require a budget exceeding $70,000 a year, is recognized to be beyond the financial resources of the general funds of the APA, under current rates of dues. It was only with the financial support of the Psychiatric Foundation that it appeared feasible to undertake the task. From the Psychiatric Foundation have been received for this purpose grants of $1,140.33 in 1947, $2,029.70 in 1948, $35,135.67 in 1949, and $13,862.70 in the first 9 months of 1950. It thus became possible for the APA to start an inspection service. A special type of administrative committee, the Central Inspection Board, of 10 members, was established to implement the enterprise. Dr. Mesrop Tarumianz has been serving as the Chairman of this Board, with vigor and courage (and with no remuneration). Dr. Ralph Chambers began service as the Chief Inspector, on full-time salary, in 1949. Dr. Edgar C. Yerbury served as Associate Inspector for 6 months in 1950-51. Considerable work has been accomplished. The 35 state mental hospitals in 9 states (California, Connecticut, Idaho, Kentucky, Maryland, New Jersey, North Carolina, and Virginia, and the province of Saskatchewan) have been inspected, covering a total patient population of 87,808. A plan of rating has been developed and policies have been determined regarding the manner and timing of public statements as to the results of inspection and rating, but these decisions have not yet been activated.

The task of inspecting and rating general hospitals had been carried on for years by the American College of Surgeons, and mental hospitals have in the past been inspected by that organization. The costs to the American College of Surgeons have become very great. Plans are now being developed for the American Hospital Association to assume the financial burden of general hospital inspections. In accordance with an understanding reached in 1949, the American College of Surgeons is expecting the APA (through the Central Inspection Board) to become responsible for mental hospital inspections and ratings in 1951.

There is another and different sort of hospital inspection—for the approval of the hospital's teaching functions, *i.e.*, internships and residency training. This inspection and approval is conducted by the Council on Medical Education and Hospitals of the American Medical Association, in collaboration with the specialty boards. There is, of course, some correlation between the adequacy of the service functions of a hospital and its approval as a training hospital, but the correlation is not one hundred percent. The Central Inspection Board of The American Psychiatric Association in its inspection of mental hospitals is primarily concerned with the adequacy of provisions for the proper care and treatment of patients.

The winter of 1950-51 has been a critical time for the Central Inspection Board. Financial support at about the same rate as previously has been continued by the National Association for Mental Health (the organization in which the Psychiatric Foundation merged with the National Committee for Mental Hygiene and the National Mental Health Foundation). That organization has expressed the desire to increase its support when its own fund-raising campaign gets rolling. Meanwhile, it has been decided that it is necessary to set a fee for the inspection service so that the task can be carried forward at a reasonable speed.

It does not appear desirable to aim at an inspection service entirely supported by fees. Continuing support and possible increasing support by the National Association for Mental Health will provide a proper degree of independence and freedom, assuring unbiased inspections.

In the discussions of these matters during the current year, it has repeatedly been suggested that the Central Inspection Board be incorporated, thus establishing it as a legally responsible entity, and relieving The American Psychiatric Association of the legal responsibility for its operation and finances.

Decisions about the Central Inspection Board have critical importance for the practical achievement of good hospital care of patients, and good conditions for professional psychiatric work in the mental hospitals. If present hopes of financing the work of the Central Inspection Board from a combination of grants and fees should not be realized, the Association does not have the means to conduct this enterprise out of its own financial resources.

This statement has been prepared to inform the membership of The American Psychiatric Association clearly and directly about this matter, so that the gravity of the problem will be appreciated, and to stimulate those members who feel a great interest in the matter to present their views to members of the Council.

JOHN C. WHITEHORN, M. D.,
President, American
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MENTAL HOSPITAL ACHIEVEMENT AWARDS

Two years ago the Council of The American Psychiatric Association authorized special awards including a certificate of achievement with an honorarium to one or more hospitals in the United States and Canada each year that reported outstanding evidence of improved services in overcoming handicaps under which most of the hospitals operate.

That the mental hospitals have for the most part been doing good work in spite of their handicaps is or should be well known. Superintendents have constantly been aware of their needs and in their reports year after year have drawn them to the attention of the authorities. They have pointed out that with larger staffs and more adequate housing and equipment better service could be rendered to their patients; and they have been doing the best they could with available facilities.

The booklet, "On the Positive Side," recently issued by the Mental Hospital Service of the A.P.A., serves to call attention to a rather remarkable list of achievements in progressive administrative psychiatry in many of our hospitals. These are not to be regarded merely as new efforts prompted by hope of reward. Similar developments have been taking place in many institutions over the years without attracting public notice. The achievement awards, therefore, are simply giving credit where credit is due.

The 1949 award went to three hospitals. Boston State Hospital (Dr. Walter E. Barton, superintendent) in a 3-year period progressed from a condition wherein 78% of its ward positions were vacant to a full staff. Facilities for treatment were greatly improved in various ways; a comprehensive staff education program was set up; and research was encouraged. Columbus (Ohio) State Hospital (Dr. J. Fremont Bateman, superintendent) after studying the adverse effect on patients of the prevailing attitude of employees toward them developed an education program for attendants that successfully changed attitudes and enabled employees to take a positive rôle in treatment rather than a negative one. The Veterans Administration Hospital, North Little Rock, Ark. (Dr. H. W. Sterling, superintendent) has pioneered in bringing the community into the hospital and thus educating the public as to the hospital's problems and personnel needs as well as its accomplishments. As a result of this community plan a state mental hygiene society was established in Arkansas.

The 1950 award was also divided among three hospitals. Moose Lake (Minnesota) State Hospital (Dr. Henry Hutchinson, su-

perintendent) in March 1948 had the highest rate in the country for patients in restraint. At that time a program of reducing the use of restraint was begun and bore fruit slowly until in April 1949 all restraints were abolished. The superintendent reports that ward personnel have acquired a healthier emotional adjustment and attitude toward their patients and the patients have adjusted better to the employees and the hospital. Ponoka (Alberta, Canada) Provincial Mental Hospital (Dr. Randall R. MacLean, superintendent) has provided a separate establishment for the care of patients over 70 years of age. Here these patients receive special diets and are cared for by attendants who are particularly interested in old people. Social, recreational, and occupational activities are arranged in accordance with the interests of older patients. There has been a noticeable improvement in morale and the death rate appears reduced. Peoria (Illinois) State Hospital (Dr. Walter H. Baer, superintendent) played a vital rôle in the establishment of a cooperative community mental hygiene clinic. This serves as the hospital's outpatient department and makes possible an earlier return of patients to the community. The clinic has met with wholehearted cooperation of public and private agencies.

These are but samples of excellent work deserving recognition that was reported during the 2-year period from 33 hospitals in 21 states, the District of Columbia, Territory of Hawaii, and 2 Canadian provinces. Doubtless similar reports will be forthcoming from other states and provinces as tangible evidence of steadily improving services in mental hospitals throughout the land.

NEWS AND NOTES

PENNSYLVANIA HOSPITAL BICENTENNIAL.—Principal among the numerous events during this spring marking the 200th anniversary of the founding of the Pennsylvania Hospital will be the anniversary banquet at the Benjamin Franklin Hotel, Philadelphia, May 11, at which it is anticipated that approximately 1,000 guests will be present.

The date May 11 was chosen for the anniversary banquet as it was on this day 200 years ago that the Pennsylvania Hospital received its charter.

SCIENTIFIC WRITING.—In the October 1950 issue of *The Psychiatric Quarterly* appears an editorial that we commend to the attention of writers of papers for publication. It presents helpful suggestions about the organization of a scientific paper, the use of statistics and technical terms, the rules for manuscript presentation, and bibliographies.

DR. TARUMIANZ HONORED.—At the annual dinner meeting of the Delaware Chamber of Commerce on January 25, 1951, Dr. M. A. Tarumianz, superintendent of the Delaware State Hospital, received the Marvel Cup. This was the first presentation of this award, which will be given each year for outstanding contribution to human welfare. Dr. H. V. Holloway, former state superintendent of public instruction, in presenting the award to Dr. Tarumianz referred to him as a "man of vision, energetic personality, sympathetic physician, skilled psychiatrist, efficient administrator, outstanding citizen."

INTERNATIONAL CONGRESS FOR PSYCHOTHERAPEUTICS.—This Congress will take place under the auspices of the Dutch Society for Psychotherapeutics at Leiden-Oegstgeest September 5-8, 1951. The subject of the Congress will be "The Affective Contact," and six plenary sessions will be held on various aspects of psychotherapy. In sections on child psychiatry, group psychotherapy, and psychosomatic therapy there will be opportunity for foreign speakers to contribute. Dr. E. A. D. E. Carp is chairman of the Congress committee. For further information write to the secretary, Dr. A. H. Fortanier, Psychiatric Clinic of the State University of Leiden.

SECOND INTERNATIONAL GERONTOLOGICAL CONGRESS.—St. Louis, Missouri, September 9-14, 1951, are the place and date of this Congress, held under the sponsorship of the International Association of Gerontological Societies, the Gerontological Society, Inc., and the American Geriatrics Society.

The program will be in four sections: biology and medicine; sociology, psychology, education, and religion; economics and welfare; medical services, hygiene, and housing. There will be many short papers, several symposia, and sessions devoted to problem identification in each division. There will be exhibits also.

The fee for registration will be $10. For further information write to Dr. E. V. Cowdry, president of the Congress, Washington University Medical School, 660 South Kingshighway, St. Louis 10, Mo.

SOCIAL SERVICES IN GREAT BRITAIN.—The Roffey Park Institute of Occupational Health and Social Medicine, at Horsham, Sussex, England, is again presenting two summer sessions. These resident International Summer Schools are planned for doctors, social workers, personnel managers, vocational advisers, psychologists, and senior nursing administrators who wish to gain an understanding of the social services in Great Britain.

Dates of the two courses are July 30 to August 11 and August 13 to 25. Attendance is limited to 25 persons, and the fee is $60; this includes board, tuition, and excursions. Roffey Park Rehabilitation Center, where the sessions take place, is located 35 miles from London. Dr. T. M. Ling is medical

director of the Centre and Director of the Roffey Park Institute.

GENERAL SEMANTICS SUMMER SEMINAR.—The Institute of General Semantics will present a Summer Seminar-Workshop August 6 through September 2 at Bard College, Annandale-on-Hudson, N. Y. Dr. O. R. Bontrager, professor of education at Pennsylvania State Teachers College, California, Penna., will be the lecturer. Charges for the seminar are $250 for tuition and $40 a week for room and board. It is possible to attend for one-half the course, and there is one scholarship available. For further information write to Miss M. Kendig, Institute of General Semantics, Lakeville, Conn.

"ENDOCRIMINOLOGY."—This term was coined by Rynearson of the Mayo Clinic. E. C. Hamblen, professor of endocrinology, Duke University, defines endocriminology (Southern Medical Journal, Vol. 43, No. 6):

"A psychological state of clinicians with strong endocrine prejudices, which results in the incrimination of the endocrine glands without adequate objective diagnostic data, and in the practice of organotherapy without clear-cut indications."

Professor Hamblen points out that "the uses of endocrine therapy are far more widespread than are existing clear-cut endocrinological indications." He warns against empiric endocrine therapy and indicates some of the untoward responses and metabolic disturbances that may follow indiscriminate use of various widely publicized endocrine gland preparations.

THIRD WESTERN INSTITUTE ON EPILEPSY.—The dates of this Institute in Salt Lake City, formerly set for June 15-17, has been changed to the weekend of June 22-24, 1951.

WASHINGTON PSYCHIATRIC SOCIETY.—At the meeting on January 5, 1951, the following new officers were elected: Dr. Norman Q. Brill, president; Dr. Zigmond M. Lebensohn, president-elect; Dr. Henry P. Laughlin, secretary; Dr. Marshall DeG. Ruffin, treasurer. In addition to these four, the Council includes Dr. Bernard A. Cruvant, Dr. Robert T. Morse, and Dr. Lucy O. Ozarin.

NEW HOSPITAL AT PORT CHESTER.—A new mental hospital will be opened on or about May 1 in Port Chester, New York. This hospital will be called High Point and will be under the direction of Dr. Alexander Gralnick and his associates, all of whom are members of The American Psychiatric Association and a large percentage being certified by the American Board of Psychiatry and Neurology. Among the staff will be Dr. Stephen P. Jewett, now director of psychiatry at the New York Medical College, who will be chief consultant in clinical psychiatry, and Dr. William V. Silverberg who will be one of the chief consultants in psychotherapy. While this hospital will be opened to all forms of psychiatric treatment, the emphasis of Dr. Gralnick and his associates will be on analytically orientated psychotherapy. All inquiries should be sent directly to Dr. Gralnick at the hospital.

BOOK REVIEWS

A Pattern for Hospital Care. By *Eli Ginsberg*. (New York: Columbia University Press, 1949.)

This book is the final report of the New York State Hospital Study, which was made by Columbia University under a contract with the New York State Joint Hospital Survey and Planning Commission. The author was the director of the study for the commission, which was given the responsibility for developing a long-range state construction program to provide adequate hospital, clinic, and related services. The resulting analysis was a study, not a survey, with considerable emphasis on hospital financing.

The report is presented in easily readable form with separate sections on "General Hospitalization" and "Long Term Illness," the latter including a chapter on "State Hospitals for Mental Diseases" and "A Pattern for Psychiatric Care." Each chapter is summarized at its conclusion, and there are chapters presenting the "Findings and Recommendations" of the study.

The section related to general hospitals recommends that, as an alternate to any considerable new construction of such facilities, the hospitals provide diagnostic clinic services for ambulatory patients, extend care to bedridden patients who can be adequately cared for in their own homes, and promote greater coverage of the population by voluntary hospitalization insurance—which Ginsberg estimates 85% of the people can afford. Furthermore, to ensure the establishment and proper operation of the diagnostic clinics, he recommends that the state subsidize this service and cites the fact that such moneys are already available for cancer, orthopedic, cerebral palsy, tuberculosis, and mental hygiene clinics.

The chapters dealing with the care of the mentally ill will be of most interest to the readers of this Journal. As in other divisions of the study, the findings and recommendations in this field resulted from an analysis of data received from state and other available sources of information, as well as discussions with persons interested in this aspect of care.

The findings of the study relating to the state hospitals are concerned with excessively high occupancy, steady increase in number of patients hospitalized for mental diseases—prediction of a 2,000-3,000 increase annually—and increase in the cost of care in two decades from $30 million per annum to more than $100 million. Comment is made upon the relative shortage of doctors, making it difficult to develop an effective psychotherapeutic program.

The pattern of psychiatric care suggested includes a "minimum," "intermediate," and "desirable" 5-year construction program to correct overcrowding at estimated costs ranging from 48 million to 240 million dollars. The "minimum" program would provide 6,000 beds in addition to approximately 5,500 beds contracted or to be placed under contract. This would provide for increased census only. The "intermediate" program would reduce the number of obsolete beds in addition to caring for increased census, and the "desirable" program would provide for the elimination of all obsolete beds and new construction for increases in hospital population. It was also recommended that bed expansion be made in urban centers in order to attract qualified psychiatric personnel on both a full-time and a consulting basis.

Relative to the much-debated problem of the care of the senile mental patient, it was concluded that there is no large number of aged persons in New York State mental hospitals who require custodial care rather than the specialized services provided in such hospitals. For the care of these persons it was considered undesirable to develop facilities outside the administrative framework of a state mental hospital, as it was believed that such a program would only compound the difficulties. Multi-story buildings adequately equipped with elevators were preferred so that savings might be put into higher ratios of personnel.

Although Ginsberg recognizes its desirability, he is not enthusiastic about the family-care program as a means of caring for a relatively high percentage of mental patients. He places more stress on expansion of the convalescent care program, including personnel and facilities. He believes this would lead to earlier release and a reduced readmission rate. It would call for a substantial increase in terms of convalescent clinics, including personnel to provide constructive psychiatric supervision and vocational assistance. Part of this expanded service, he says, could be provided through community clinics subsidized by the state.

Commenting upon the hospital treatment program, the report notes shortcomings of both facilities and personnel. Adjustment of salary scales to attract physicians was advised. A 15% increase in expenditures for mental hospitals over the next few years was recommended so that more and better qualified persons could be employed.

An appraisal was made of recommendations to reduce the admission rate by developing psychiatric clinics in general hospitals and expanding community mental hygiene clinics. The general hospital ward was thought to be desirable as a means of providing broad medical service, and Ginsberg feels that only tentative observations should be made now. He points to the higher costs of care in general hospitals, the selection of patients (which generally excludes psychotics) in units now in operation, and concludes that early treatment of a maximum number of patients could be provided as satisfactorily in state institutions located in large urban centers.

As it becomes available to larger numbers, mental hygiene clinic service will probably keep some patients from being hospitalized, but, he concludes, such clinics might also add temporarily to the admission rate by earlier diagnosis. Increased funds for clinics were recommended.

It was recommended that the primary responsibility for the development of effective mental hygiene programs be centered in the Department of Mental Hygiene, but the staffs of the Department of Health should be educated in the principles of mental hygiene so they can also contribute toward prevention through their community contacts.

The primary requisites for a well-integrated mental health program are given as the need for extensive research into every phase of the problem and the establishment of training facilities for all groups of psychiatric personnel.

The final recommendation in the report suggests the establishment of a State Hospital Commission to collect basic hospital statistical information, inspect all hospital facilities, develop a hospital rate structure and to establish administrative supervision over those aspects of hospital operation that involve the community. This recommendation was based on the fact that there is no agency in New York State exercising broad supervision over general hospitals. Inspections of hospitals are the responsibility of several state departments, and, the author thinks, there should be a permanent agency responsible for planning and allocation of funds for construction.

This report will be of considerable interest to those who are concerned with hospital planning as well as economists and others interested in this aspect of state and local administration.

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VARIETIES OF DELINQUENT YOUTH: An Introduction to Constitutional Psychiatry. By *W. H. Sheldon.* (New York; Harper & Brothers, 1949. Price: $8.00.)

The reader who is acquainted with Sheldon's *The Varieties of Human Physique* and *The Varieties of Temperament* is aware of the emphasis he places upon *structure* as the primary determinant of behavior, "the structure-behavior continuum which is the human personality." *Varieties of Delinquent Youth* is the first of a series of volumes planned for the Human Constitution series.

The empirical portion of the volume reports 200 biographies of boys known to the Hayden Goodwill Inn, Boston, a home operated as a rehabilitation center. Each biography is introduced with a standardized back, side, and front photograph, together with a description of the somatotype and temperament. This is followed by brief statements summarized under the headings of delinquency; origins and family; mental history, achievement; medical; running record; comment. In view of the stress placed on the biologic factors in causation it is not surprising that interpersonal relationships receive little attention. In fact, any interest in them is decried, and hence social work and dynamic psychiatry come in for a good deal of highly emotionally charged criticism. Sheldon's criticism of psychoanalysis is at times vicious, although he professes high regard for Freud. He states that in an interview with Freud in which he was setting forth his theory that without an orientation in morphology "psychoanalysis was a house of cards already at the mercy of priestly and cultish exploitation," Freud agreed and added, "many of the people who practice psychoanalysis in my name are either fools or scoundrels. I do not like 'Freudianism' any better, perhaps, than you do. But I study minds, and I cannot quite believe that bodily structure and mind can be so connected that analysis of the one will lead to an understanding of the other." For Sheldon, of course, there is "no mind-body problem; no conscious *versus* unconscious; only structure and behavior, which seem to make a functional continuum."

Sheldon's scientific contribution consists in his refinement of anthropometric analysis of the constitution. And one can quite readily agree with him that the Kraeplinian diagnostic typology is inapplicable to real people. But it is one thing to assume that structure is the primary actor in the elaboration of behavior and conduct and quite another to discover exactly how it makes use of all the social and environmental factors encountered in the life of an individual. The failure to do so drives Sheldon to a pessimistic outlook. He must needs, therefore, be critical of modern medicine, which, according to him, is keeping people alive indiscriminately. In fact, in despair, he finds that "the thing to do might be to promote exterminative wars."

And finally it should be pointed out that little is to be learned about delinquency as such from this book. Sheldon's concept for this purpose includes too much. Legal delinquency, that is code violations, hardly can be just an external overlay of the basic constitution.

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EMOTIONAL DISORDERS OF CHILDREN: A Case Book of Child Psychiatry. By *Gerald H. J. Pearson.* (New York; Norton & Company, 1949).

This book, written by an experienced child psychiatrist of considerable attainment, has several objectives.

It is one of the avowed purposes to "correlate the field of child psychiatry with that of adult psychiatry—the various clinical syndromes of the neuroses, their diagnostic criteria, their psychopathology, and their treatment." This plan is carried out consistently and has determined the chapter organization of the volume. Many people have struggled with the problem of diagnostic grouping of children's "behavior problems;" and it seems to this reviewer that the classification of psychological illnesses offered on pages 47 and 48 has decided merit and is superior to most other attempts.

The second purpose is implied in the subtitle. The brief case illustrations and the more detailed case discussions are presented with admirable skill and lucidity. An opportunity to read these reports is worth more than the price of the book. Pearson takes the reader to his workshop and leaves him with respect for expert workmanship.

There is, however, a third purpose that is too glaringly propagandist in intent and execution. Every author has undoubtedly the right (and obligation) to present his point of view. There are many books by analysts and nonanalysts who do this well without losing perspective and without the grandiloquent assertion that nobody and nothing else amounts to anything. But the following few sample passages from Pearson's book sound either like doctrinaire usurpation or (and this may be synonymous) a reaction to the "unconscious" need for self-assertion.

Page 9: "*Only* through psychoanalysis can there be an adequate understanding of the dynamics of the psyche in health or illness, and . . . without such an understanding there can be no helpful management of the child who is emotionally ill." Page 41: "She [child with presenting symptom of enuresis] could be treated *only* by a child analyst using psychoanalytic techniques." Page 107: ". . . treatment [of phobias] should not be undertaken *except* by a trained child analyst." Page 165: "The psychic conflicts that produce such severe organic results are usually unconscious and *only* by the technique of psychoanalysis can they be made conscious to the patient and thus solved." Page 311: "For the vast majority of severely ill patients, psychoanalytic therapy offers the greatest hope of *real* cure, or at least of a *real* amelioration of the neurosis. Such treatment can be given *only* by a qualified psychoanalyst." Page 340: "Psychoanalysis is the *most* effective and curative form of psychotherapy." Page 329: "If the therapist is more than usually intuitive, he can learn it by much clinical experience. But for most of us, a personal psychoanalysis is an *absolute* prerequisite." On page 312, the pediatrician or general practitioner consulted about a psychoneurotic, psychotic, or delinquent child is told that "his function will be to refer the case to a child *analyst*." (All italics are the reviewer's.)

No dogma of exclusive salvation has ever been stated and reiterated with greater definiteness. No tradesman has ever made more sweeping claims for his ware; the next step—Heaven forbid!—would be to break out in singing commercials. This attitude is, of course, becoming anachronistic at a time when many analysts have moved away from fundamentalism and liberated themselves from an overwhelming "father identification" with Freud, when many analysts have sufficient regard for reality to acknowledge contributions made by people capable of learning to understand themselves and their fellow men in positions other than recumbent on an analytic couch. Pearson does not make such an acknowledgment; he states on page 339: "Historically, the practice of therapy in psychiatry and *all* [reviewers' italics] our knowledge of the psychic life emanate from the discoveries made by Freud and his pupils."

The desire to express everything in terms that should sound psychoanalytic leads the author sometimes to the use of phrases that are either hackneyed or stilted. On page 300, we find this monumental truth: "Instinctual desires require an object—usually another human being—for their gratification. *Therefore* [reviewer's italics] the individual has to live in a social group."

Pearson clings to the determinism of the late nineteenth and early twentieth century concept of constitution; this is, of course, in keeping with Freudian views. Psychosis "is weighted heavily on the side of sexual constitution (ancestral experience)" and "schizophrenic children are constitutionally not capable of profiting from the usual environment." Nevertheless, such a child should have "a psychoanalytically trained therapist" treat him "intensively for *a year or two*," then the number of interviews should be reduced, and "toward the end of adolescence the patient should have *several years* of psychoanalysis." (Reviewer's italics.)

On page 304, Pearson makes one of several excellent observations. He writes with profound wisdom: "Most people believe they possess the final truths concerning the psychic life and tend to repudiate, often with scorn, any fact—no matter how well proved—that is in disagreement." Pearson, who feels that he has the "final truths," obviously does not think that this sentence applies to himself.

To avoid any mistake, this reviewer does not wish to take here a stand for or against psychoanalysis as such. He would be equally critical of any psychiatrist or group of psychiatrists claiming to know all the answers to the exclusion of anybody else. Fortunately, he knows of very few, be they analysts or nonanalysts, who take such a limited view.

For the rest, in addition to the excellent case discussions, the book has some fine observations. There are many offers of sound, practical, well-reasoned advice. There is a beautiful chapter on *The Child Who is Intellectually Retarded* (though it is difficult to subscribe to the suggestion that glutamic acid "should be tried" in all cases). Pearson has a facile style of writing and some of his general remarks are so aptly coined that they deserve being entered in a collection of quotations.

The book is well worth reading. It is instructive, a record of clinical mastery and, though occasionally irritating, a stimulating and thought-provoking document.

L. K.

PROGRESS IN NEUROLOGY AND PSYCHIATRY. Edited by *E. A. Spiegel, M.D.* (New York, Grune and Stratton, 1950.)

Volume I of this "Annual Review" was published in 1946 and covered "the period from December 1944 to December 1945." Accordingly, the present Volume V covers the period from December 1948

to December 1949. This review project was inaugurated with E. A. Spiegel as the sole editor assisted by 53 contributors (Volume I). In 1946 an Editorial Board of 3 members was established (Volume II). In 1947 another member and an "Editorial Assistant" was added to that board (Volume III). With the annual assistance of a changing list of contributors, varying from 50 for Volume II to 69, 67, and 64 for the succeeding volumes, the editor has assured his readers a well-grounded undertaking.

The arrangement of the text of Volume V under the 4 headings: Basic Sciences, Neurology, Neurosurgery, and Psychiatry with a total of 34 chapters, is also true of all preceding volumes except Volume I, the text of which is appropriately presented in 29 chapters. Mention that "an aggregate of over 3,300 papers" was surveyed in the preparation of Volume V gives indication of the thoroughness with which the annual review is carried out.

The somatic approach to the treatment of mental disorders is reflected primarily in these progress volumes and in such presentation the Basic Sciences section in each volume is a very welcome introduction to the clinical sections. To hold size and cost of the annual volume within reasonable limits it is stated that the editorial plan is to present some subject material only biennially. This appears reasonable and practical for such areas as "neuro-ophthalmology, neurosyphilis, vascular system, criminal psychopathology," and allied fields. Volume V presents well-written chapters on the last 3 subjects named.

A very helpful bibliography is given in the closing pages of each chapter and an 11-page general index adds further value to the volume.

These annual review volumes are well edited and merit not only a place in medical libraries but also frequent references to contents.

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PRACTICAL NEUROLOGICAL DIAGNOSIS. Fourth Edition. By *R. Glen Spurling, M. D.* (Springfield, Ill.: Charles C. Thomas, 1950. Price: $6.00.)

In this volume the author has given a lucid and concise account of the anatomical and physiological principles involved, and the methods employed in the process of neurological diagnosis. The techniques have been drawn from the author's own wide experience and are similar to those generally used but frequently not well described in larger works. The book is of very practical value to the student and practitioner, which is the author's main purpose.

The first chapter consists of a simple generalization regarding method in history taking and a description of some of the more important symptoms and signs to be evaluated both in adults and in children. The second chapter describes the general methods of testing the cranial nerves together with an excellent summary of the anatomy and physiology involved. Certain timely comments are made, for example, concerning the use of the ophthalmoscope to prevent patients coming too late to the hospital to save vision. The usual explanation for the preservation of central vision in cases of homonymous hemianopia produced by lesions of the occipital lobe is given, but the well-known diagram from Homans shows sparing of central vision in the presence of a complete section of the optic radiations adjacent to the visual cortex. An occasional statement is made that may be open to question, for example that the tonsil is supplied by the maxillary nerve. The description of the physiology of the labyrinth is of necessity limited especially in regard to the semicircular canals.

Chapter three contains an excellent account of the anatomy and physiology and clinical considerations connected with cerebral function. A surprising amount of factual material has been condensed into brief lucid paragraphs omitting theoretical and unconfirmed data.

Chapter four deals with the cerebellum in a similar manner. The involved information and conflicting views are given with brevity and clarity except perhaps for the description of the fronto-ponto-cerebellar pathways and thalamic circuits. Description of clinical signs and methods of testing are excellent.

Chapter five concerns the spinal cord. On page 110 perhaps it should be made clear that microglia are generally considered to be ectodermal elements. The chapter contains an excellent account of the fundamental points in connection with the anatomy and the physiology of spinal cord symptomatology and methods of clinical examination. It includes some paragraphs on urinary bladder function. For clarity, brevity, and accuracy the chapter would be difficult to improve. The description of the spinal reflexes is left for chapter six, and gives general directions for eliciting these with an explanation of their relative importance.

Chapter seven describes the physiology of the cerebrospinal fluid circulation, with some clinical considerations including the technique of lumbar puncture and the interpretation of the data derived therefrom. The risks are discussed concerning cerebral herniation at the level of the tentorium. One could suggest mention of the syndrome of dilatation and fixation of the pupil or third nerve paresis. The method for carrying out spinal manometric tests could probably be more completely described. Manual compression is probably employed, which is generally sufficient. However, the blood pressure cuff method also has advantages and both are generally useful. For the usual lumbar puncture it would be better to advocate the use of gloves rather than the older method of holding the needle with a towel.

The use of the terms internal and external system to describe the ventricular and the subarachnoid systems respectively seems generally unsatisfactory. A block anywhere in the whole system may cause internal hydrocephalus of either communicating or noncommunicating type. The term external could better be limited to spaces walled off from or outside the internal system.

Chapter eight deals with X-ray diagnosis. The indications for and the dangers of encephalography, ventriculography, and myelography are discussed. Generally speaking this is an excellent summary of X-ray data and technique. Angiography is the principal omission.

The several chapters are preceded by a glossary that may be of some help but would be improved if more explicit and complete. A simple outline for the examination of the nervous system is given in an appendix, and a brief list of general references.

Altogether this is a very excellent book on practical neurological diagnosis.

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THE PSYCHOLOGY OF EXCEPTIONAL CHILDREN. Revised Edition. By *Karl C. Garrison, Ph. D.* (New York: The Ronald Press Company, 1950.)

This textbook is designed for the use of "teachers, social workers, parents, and all others who are concerned with developing growing boys and girls into tomorrow's well adjusted citizens." The emphasis throughout is on the dynamic approach, and on the study of the child as an individual, with education being regarded as a development of personality rather than a mere acquisition of facts. The introductory two parts deal with a general discussion of the fundamental principles of development, physical, psychological, and from a personality standpoint. Part III covers the subject of Mentally Retarded Children; Part IV, Gifted Children; Parts V and VI, Physically Handicapped and Emotionally and Socially Maladjusted Children. Each chapter contains evidence of careful preparation, and is followed by a list of review questions, and of selected references. Many excellent summaries of current literature are given in the text. Dr. Garrison has done a beautiful job in bringing together in an encyclopedic synopsized form the information available on the various subjects related to child development. As a textbook for the groups to whom it is addressed, it should have great value when supplemented by the suggested literature and by discussion. From the point of view of the psychiatrist probably the most practical use of this book would be as a basis for lectures to the personnel of special schools and parent or teacher groups, though it might serve also as a quick reference book in current psychological thinking.

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CLINICAL ELECTROENCEPHALOGRAPHY. By *Robert Cohn, M. D.* (New York: McGraw-Hill Book Co., Inc., 1949.)

The last *Atlas on Clinical Electroencephalography* by Gibbs and Gibbs was published in 1941. During the past 9 years several generations of electroencephalographers grew up throughout the world and many hundred individual papers, predominantly of a descriptive nature, dealing with practical clinical problems, were published. A new atlas designed to correlate the rich body of neurophysiological data of the past decade with the accumulated statistical material of the various disease entities was sorely needed.

It is, therefore, imperative that any evaluation of a book intended to fill the gap should be on two levels: first, an analysis of what is in the book; second, what in the reviewer's opinion should have been there. The author states his objectives concisely, relying chiefly on his own experiences and material (U. S. Naval Hospital, Bethesda, Maryland) consisting of service men and their relatives. The first chapter deals with the fundamentals of EEG—the balance of the book consists of case material divided into various (loosely grouped) disease entities. The criteria of abnormality are his own, lucidly stated, and the statistical survey of abnormality drawn up in histograms was matched against normal controls (251 cases). The presentation follows that of Gibbs and of similar atlases of electrocardiography—on one side, the case history and interpretation; on the opposite side, representative samples from the record.

The first chapter on the fundamentals of EEG already reveals, however, that the various theories on the origin and nature of brain waves are not presented simply in that the author adds his own speculations to the already existing plethora of tantalizing theories. A simple critical opinion would have been more refreshing. Few will be satisfied with his 8-lead technique, which in the hands of the majority of workers has often proved inadequate for the detection of other than paroxysmal electrical events (epilepsy). Even in the latter conditions the trend is toward a dynamic approach: utilizing many (or all) the new activating techniques not only to force out seizure discharges of normal resting records, but also in an attempt to delineate an epileptogenic focus. No mention is even made of intermittant light stimulation (photic driving), which is now increasingly used as an activator.

The chapter on space-filling lesions exhibits some excellent samples (with good reproduction of the tracings). The need for a combination of extra-sharp eye and refined judgment in order to detect a focus is well illustrated in this part of the book. For localization studies the author routinely uses an 8-lead technique; he records between 2 rather distant scalp leads and also from scalp to ear. He divides the accessible cortex into 4 parts by the midline and the rolandic fissure and he attempts to place the lesion in one of these 4 sectors. This is less than what most laboratories attempt to do; therefore, his correct localization average of 85% cannot be compared with that of other authors who use more minute criteria. He thinks little of the value of out-of-phase relation, as an index of focal concentration which is, however, considered to be of great help to many of his colleagues, especially when the slow wave elements are sinusoidal and when several if not all the derivations indicate slow potentials. A plea for caution in placing too much emphasis on phase reversals

would have been justified; its summary eviction from our diagnostic equipment is not.

The chapter on encephalopathies will raise many objections because of the indiscriminate grouping together of such distant entities as, for instance, meningitis and Pick's disease. One may go along with the author's opinion on the lack of specificity of multifocal or diffuse EEG abnormalities in generalized diseases of the brain. On the other hand, the statistical treatment of etiologically different subgroups (inflammatory, degenerative, atrophic, toxic, etc.) and their further differentiation with serial recording would have been of definite value. In the field of encephalopathies especially, the range of abnormality found by various authors is wide. This chapter does not even make a dent in the wall of confusion prevailing on the subject.

The chapter on epilepsy occupies very little room considering the major importance of the subject, but here simplicity is achieved without the price of inaccuracy. The important subject of activation, however, has been rather scantily dealt with. Many laboratories do sleep records routinely—and many newcomers to this field are in need of a great deal of information about the technique and interpretation of sleep records. They will not find it in this book.

Perhaps the fact that the author's case material comes from service hospitals accounts for the paucity of information concerning children's records. Children make up a sizable portion of the patient material of most civilian hospitals and it is in this field that the workers who entered the profession during the past decade, including the many who learned EEG in the armed services, would have been most interested in having a book of reference to which to turn for information on the EEG in children.

Mention is made of parieto-occipital slowing in behaviour disorders—heretofore not published elsewhere. The author's opinion on bilateral slowing in frontal derivations, emphasized by other authors, would have been welcome. The uneven handling of the subject is illustrated in the chapter on behaviour disorders. Considering the dearth of information on such important subjects as encephalopathies, sleep record, and children's EEG, one questions the advisability of the relatively copious treatment that behaviour disorders receive, including detailed case histories of some psychopaths whose various arguments in taverns are described verbatim.

The author's ability and experience leave their mark on every page. If this book will seem to many too simple and too complicated all at the same time, it will indicate only an error in judgment.

This leads us to the major shortcoming of this work which, however, could be remedied in later editions, namely the absence of references.

If Cohn's atlas had been designed to serve as a house manual for navy hospitals one could raise no objection to the author's practice of relying chiefly on his own experience and of neglecting to match it against other worker's findings. Since the advance notices, however, lead one to believe that this expensively and finely assembled treatise aims to be a space-filling, up-to-date piece of work of universal application, the reader has the right to demand that statements, figures, opinions, should be indexed and provided with references to all the publications of the past 20 years.

Only if the afore-detailed defects and omissions are remedied can this book be unreservedly recommended to the ever-increasing circle of workers with the only available objective functional testing device of the brain—electroencephalography.

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ECOLOGY OF HEALTH. Edited by *E. H. L. Corwin, Ph.D.* (New York: Commonwealth Fund, 1949.)

The Shorter Oxford English Dictionary gives "œcology" as follows: "1. Biol. The branch of biology which deals with the mutual relations between organisms and their environment. 2. The mutual relations collectively; *e.g.* the oe. of a plant, etc. 3. Sociol. Study of the spatial distribution of a population in reference to material and social causes and effects."

According to the foreword by the editor "this volume contains the quintessence of the papers and discussions at the Institute on Public Health which was held at the New York Academy of Medicine on April 1, 2, and 3, 1947, as a part of the Centennial Celebration of the Academy." According to Harry S. Mustard, M.D., Chairman, Committee on Arrangements, Institute on Public Health, it "presents a good, though limited, cross section of public health thought, speculations and aspirations in that year of grace, 1947." It is just that. He might have said "fads, fancies, fears and fiction" for some chapters and added "facts" for others.

In the chapter on Genetics and the Public Health the lack of education of medical students in medical genetics is deplored. But a "course" consisting of 10 one-hour lectures is referred to with apparent approval. One wonders whether such a "course" would enable one to assimilate the answers derived from "the elementary genetic arithmetic" in this chapter. When we are told that "the day when we make our genetic stand has to come some time, unless we are willing to go all the way to the bottom of the biological hill," one wonders if complete eradication by some super atomic bomb might not be a kinder solution for the human race than to leave it any measure of freedom—or subject it to domination of the scientists.

The chapter on Maternal Health and Nutrition: A Problem in Preventive Medicine, has some figures, often conflicting, which do not warrant the sweeping conclusions drawn from them. Harold C. Stuart of the Harvard University School of Public Health concludes, however (and this is convincing), that, though some relationship undoubtedly exists between maternal dietary and the consequences of pregnancy, the nature of that relationship "is either entirely unknown or extremely obscure."

In the chapter on Realities in Preventive Psy-

chiatry one finds little substantial evidence that preventive psychiatry is, as stated, "a reality at last." If small and isolated projects "have satisfied all criteria as to the successful results and applicability which are required of large-scale programs," the criteria must surely have been extremely lax. On such evidence, however, Federal funds are spent lavishly in training personnel.

The chapter on Animal and Insect Reservoirs of Disease is as fine a résumé of our knowledge as could be expected in a publication of this type. It is factual rather than fanciful. So, too, largely, is the chapter on Climate, Geography, and Disease.

The Hermann M. Biggs Memorial Lecture by Dr. Haven Emerson is, as usual, a scholarly analysis and delightful presentation. It itself justifies the book. "There is some talk and writing," he says, "in favor of one glorious and comprehensive medical service station, institution, or department of government to which the sick and well alike will come clamoring for recovery from illness or for better health. Promoters of this vision of merged functions are chiefly drawn from among those who are either untrained in the specialty of medical administration or who have not carried the responsibility for personal or public health as a chosen field in the practice of medicine."

The lecture by Professor Bobbitt is another one that well merits reading; it is vastly superior to its subject. We would do better to learn more of public health—and its limitations—before we oversell it and ourselves to the public.

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Rehabilitation of the Handicapped: A Survey of Means and Methods. Edited by *William H. Soden.* (New York: The Ronald Press Co., 1949.)

"The purpose of the volume," as stated by the editor, "is to assemble representative accounts of procedures in current use for the mental and physical rehabilitation of persons disabled by illness or injury or otherwise handicapped. Workers in this field have had difficulty in obtaining reports of the accomplishments of their professional colleagues." Sodney Licht, in the foreword to the book, defines medical rehabilitation as "a concept of treatment which combines medical, psychological, educational, and sociologic methods to give the disabled maximum independence commensurate with his limitations." The ultimate goal of rehabilitation—to bring about economic independence of the handicapped person—can be most successfully achieved when the individual has first worked out his adjustment to himself, family, friends, and society in general, according to Louis Long and Charles Roth, who contribute one of the better articles in the collection.

The volume achieves its purpose as it presents a series of informative articles written by experts in the many areas related, at times only remotely, to the broad field of rehabilitation as outlined above. Workers in the field will find most of the collection of interest. Some articles are excellent—others generalizations that contribute little that is new. It is by no means a textbook. There are 5 parts to the book: (1) Medical and Surgical Techniques (early ambulation in surgery, chronic illness, plastic surgery, tuberculosis, etc.); (2) Neurological methods (cerebral palsy, epilepsy, multiple sclerosis and polio, etc.); (3) Psychiatric Developments (nursing in psychosurgery, recovery, psychiatric sense and nonsense, etc.); (4) Vocational and Social Rehabilitation (community work shop of R. I., Alcoholics Anonymous, Cleveland Rehabilitation Center, Goodwill Ind., etc.; (5) Educational and Psychological Trends (music in O. T., educational shortcomings in physical education, psychological aspects of rehabilitation, etc.).

It is surprising to find a book on rehabilitation that fails to make clear the potential contributions of physical and corrective therapy and of occupational therapy. The article by Richard Kovacs stresses the abuses of physical medicine rather than the presentation of a positive program. The article on occupational therapy contains an important challenge to the development of that profession, but does not detail what the role of O. T. is in rehabilitation. The articles on psychiatric rehabilitation are disappointing and not well chosen although probably of interest in the limited sector of the problem to which they are directed.

Being a series of loosely connected articles, the book lacks emphasis on basic organization and fundamental concepts of rehabilitation and of common principles of interrelationships. It admirably highlights the need for research, for surveys, and for study in the field.

The book is recommended as interesting contemporary reading to the many workers in the broad field of rehabilitation.

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Military Psychiatric Social Work. Department of the Army Technical Manual, TM8-241. (Washington, D.C.: U.S. Government Printing Office, 1950. Price: 20 cents.)

Attention is called to the availability of this monograph, which is "the result of careful cooperative effort on the part of almost every officer of the Psychiatric Social Work Branch of the Medical Service Corps." The manual contains chapters on the military neuropsychiatric team, duties of the military psychiatric social worker and the psychiatric social work technician, interviewing (in considerable detail), confidentiality, and operational standards of the social work section. There is a useful index.

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